

# Chemical Week

February 21, 1953

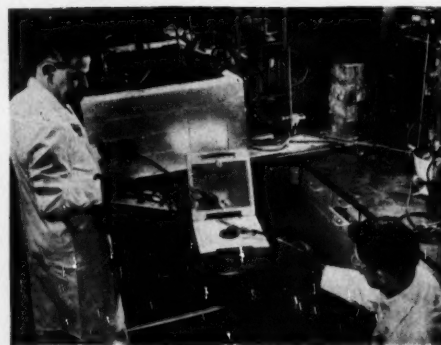
Price 35 cents



- ▶ **Target:** Constructing airfields that will stand up to the fiery blasts of jets . . . . . p. 24



- Choosing a plant site?** Here's a checklist of what to look for, what to look out for . . . . p. 36



- ▶ **Profits on the farm** lure more and more pharmaceutical firms into veterinary products . . p. 44

**Tallow's plentiful and cheap;** that's the key to new interest in using it for detergents . . p. 57

- ▶ **Selling the sizzle** of "hot" atoms poses unique problems, but it underpins isotope firms . . p. 61



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# Chemical Week

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February 21, 1953 • Chemical Week

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TABLETTED



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## OPINION....

### Better Teaching

TO THE EDITOR: I am writing to call your attention to a situation which exists in this country which you and your associates at CW may want to bring to the attention of responsible corporation executives.

The situation to which I am referring is the increasing dearth of adequately trained high school and college graduates to assume a needed role in an increasingly technological society. . . . The American Association of Science Teachers will confirm that this dearth is not confined to chemists but may be found among physicists and in other scientific and technological fields.

Some of the answers to this problem lie in science teaching in elementary and secondary schools all over the country. Here at Teachers College we hope to come to grips with these answers, and through orderly process of research, experimentation, field service to make a contribution in reversing the trend which could spell disaster to our national economy. . . . Teachers College through its years of leadership in the field of education is well equipped to establish an Institute for the Improvement of Science Teaching in American Schools. Such institutes, as past experience has shown, are costly; and with the rising expenses of graduate education generally, the College is not in the position to undertake the financing by itself. It must, therefore, appeal to foundations, corporations, or individuals who have an interest in making America a better place wherein to live through increased educational opportunities to fill unmet needs.

We are making approaches to various corporations, and we feel that if these materials and this information could be brought to the public . . . it would strengthen their interest and possibly open the doors to additional financing by other interested corporations. . . .

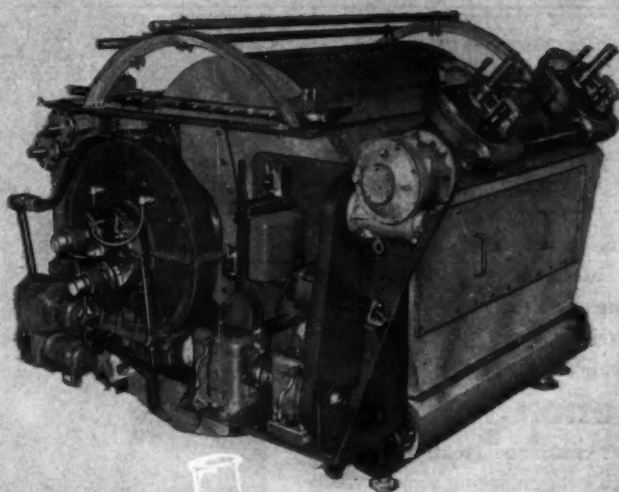
FARLEY W. WHEELWRIGHT  
Asst. General Secretary  
Teachers College  
Columbia University  
New York, N. Y.

### Foam Pioneer

TO THE EDITOR: . . . [In] an article . . . (Dec. 20) . . . on the subject of expanded plastics, including alkyd-isocyanate type foams, . . . no mention was made of Goodyear . . . and GAC Foamed Plastic.

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# Chemical Progress

## PROBLEM...

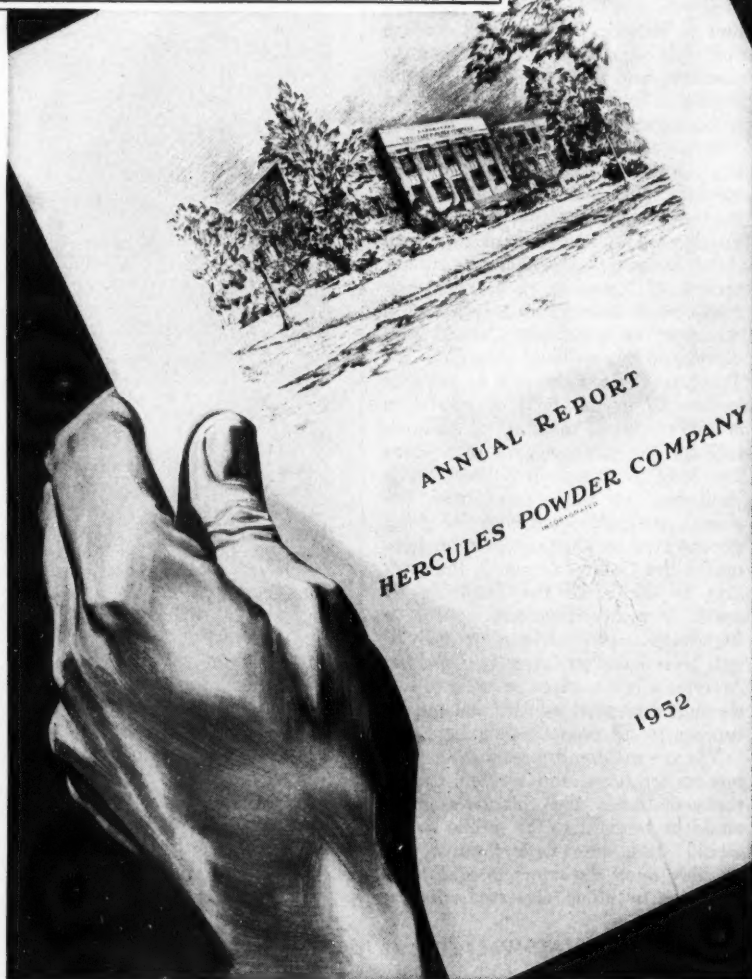
... to strengthen and diversify the operations of Hercules Powder Company so that it can continue to serve an expanding industry at home and abroad, make more jobs for more people, and provide a sound investment in the chemical industry.

## SOLUTION...

... continued creative research with ever-enlarging scope, which already has developed a wide range of products and product uses in almost every industrial field, as well as in agriculture.

## RESULT...

... an increase in sales from \$7,640,741 in 1913 to \$187,462,000 in 1952, direct employment of over 10,000 persons, and a history of 158 consecutive dividends since Hercules' organization in 1913. For a current review of this progressive chemical and financial program, we invite you to send for a copy of the 1952 annual report.



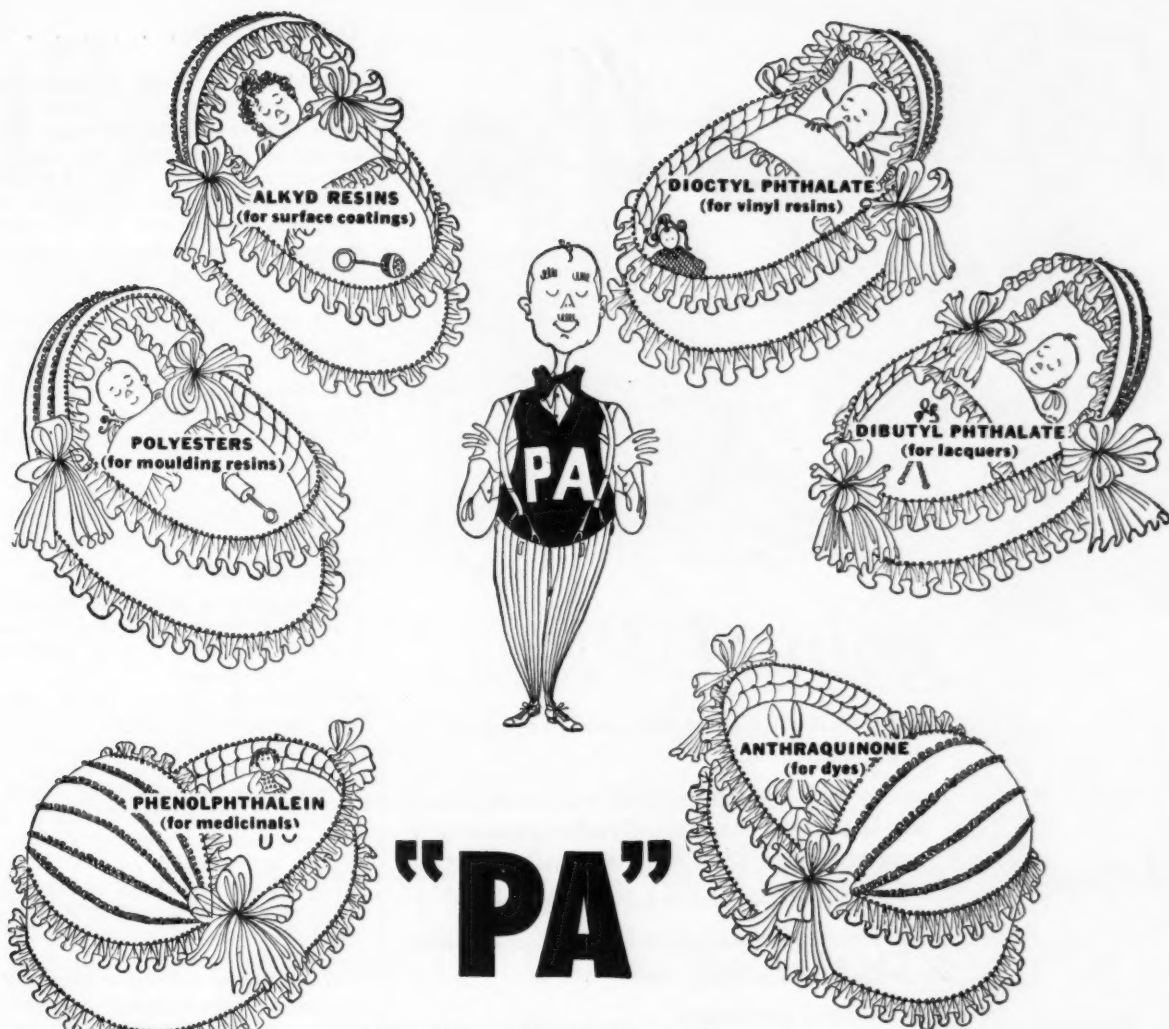
## Hercules' business is solving problems by chemistry for industry...



... insecticides, adhesives, soaps, detergents, rubber, plastics, paint, varnish, lacquer, textiles, paper, to name a few, use Hercules® synthetic resins, cellulose products, chemical cotton, terpene chemicals, rosin and rosin derivatives, chlorinated products and other chemical processing materials. Hercules® explosives serve mining, quarrying, construction, seismograph projects everywhere.

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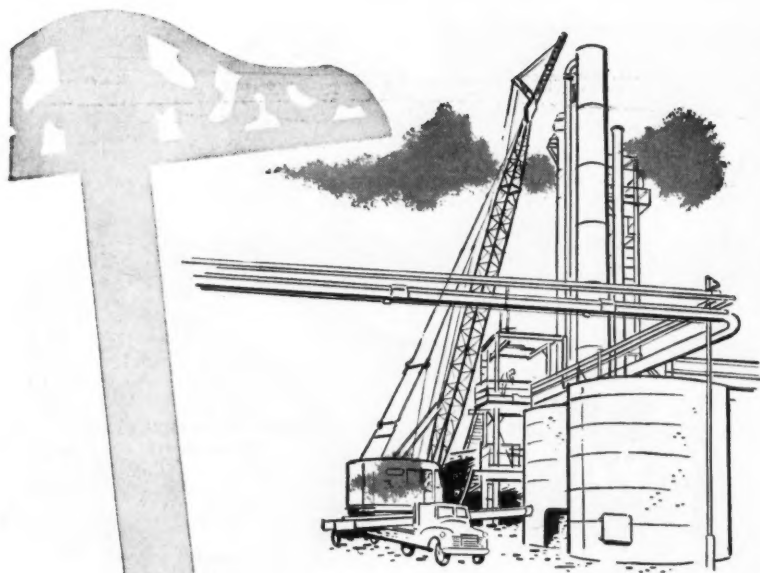
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Coal-Tar Creosote  
Bardol\* Rubber Compounding Oil  
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CUMAR\* Paracoumarone-Indene Resin





## going UP!

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- Coal tar distillation unit
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of Process Plants

Design and Construction  
of Process Units

Process Evaluations

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## OPINION . . . . .

probably pioneered the development of this type foam in this country under a contract with the Air Force. We developed this material for use in radomes for aircraft, but the original work on this material dates back to the Germans under Von Bayer, while the basic patent is owned by du Pont on the reaction of alkylid and isocyanate materials.

We enjoyed your discussion of the subject matter in your publication. However, we want to take the liberty to clarify our position on research and development in this field, as well as the Air Force, which sponsored the work. . . .

FREDERIC W. MELLOR, JR.  
Goodyear Aircraft Corp.  
Akron, Ohio

### Price of Fame

To THE EDITOR: As I read through the Jan. 17 issue . . . my attention was called to the news item entitled "Invisible Detective" . . . This . . . starts off with "Soft or Pyrex?" and then states further on that "Pyrex glass has the same refractive index . . ."

Pyrex is a registered trade-mark owned by Corning Glass Works . . . does not identify any particular composition or material. . . .

There is no such thing as "Pyrex" or "Pyrex glass." There are only Pyrex brand glasses melted only by Corning Glass Works. . . .

We feel you will agree that the expression "Soft or Pyrex?" is meaningless and that the use which has been made of our Pyrex trade-mark in such expression is not only technically incorrect but also contrary to good trade-mark practice. What Mr. Rodney Black had done is to provide a means for distinguishing soft or relatively low melting glasses from hard or relatively high melting glasses. . . .

We feel certain that there was no intention on your part to misuse our Pyrex trade-mark in the present instance. . . .

ROLF E. SCHNEIDER  
Corning Glass Works  
Corning, N. Y.

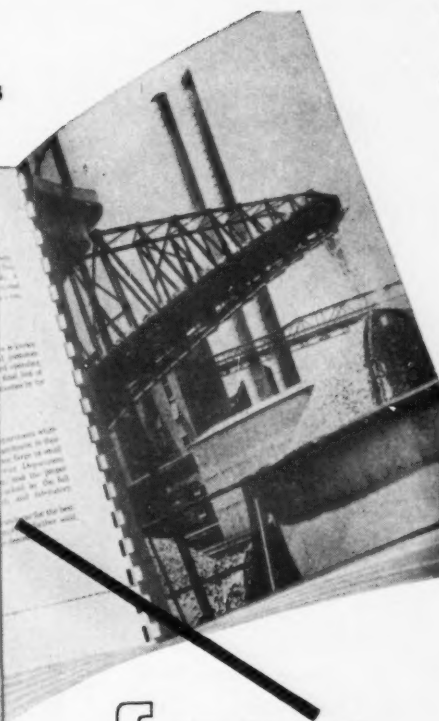
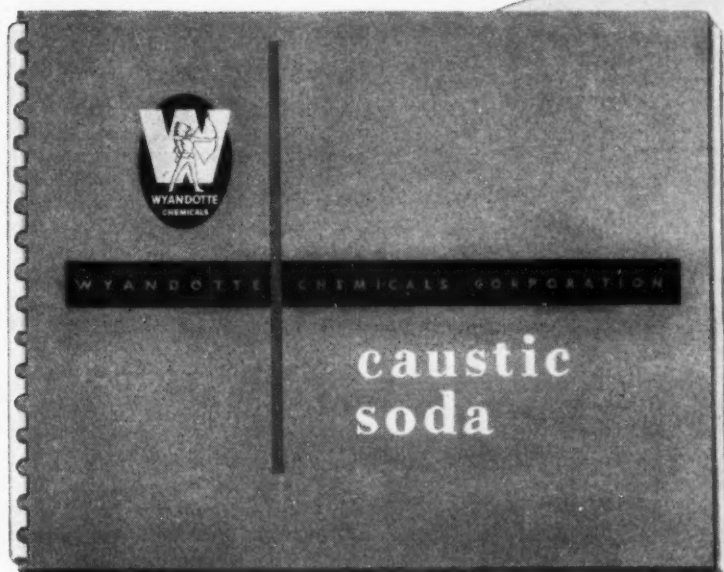
*Technically, Reader Schneider is perfectly right. But just as our old grandmother called every mechanical re-*

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.



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February 21, 1953 • Chemical Week

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**Wyandotte, Michigan**

**DEPT. CW**

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Specific Gravity at 60°F	0.775/0.785
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Fire Point C.O.C.	180/190°F
Initial Boiling Point	385/395°F
Distillation End Point	465/480°F
Unsoluble Residue	98%
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## OPINION . . . . .

*frigerator a Frigidaire, so do most chemists throughout the country distinguish between only two kinds of laboratory glassware—soft and Pyrex. It's undoubtedly a headache to Corning's patent department, but just as undoubtedly a triumphal tribute to the sales and advertising departments.*  
—Ed.

### Second to Sulfuric

TO THE EDITOR: The Jan. 31 issue . . . contained the best article on chemical lime that I have ever had the pleasure of reading in a business publication. It was not only well and attractively presented, but it was accurate and in no sense of the word misleading. Considering the fact that I am a trade association executive representing lime companies of different types and sizes from all parts of the country, you should consider this a distinct compliment, since people in my particular job are generally considered hypersensitive to articles pertaining to their own industries.

The thing that delights me particularly about your article is the fact that it underscores the importance of lime as a chemical raw material. Its position in this field is unquestioned since it ranks second to sulfuric acid in volume both from the standpoint of consumption and shipments. Unfortunately, it will require over the next several years more articles of this type to convince not only John Q. Public but the chemical consuming industries of lime's rightful place in the chemical process field instead of its historical position of being primarily a building material.

ROBERT S. BOYNTON  
General Manager  
National Lime Association  
Washington, D. C.

## DATES AHEAD . . .

**Manufacturing Chemists' Assn., Inc.,** 1953 industry conference on air pollution abatement, Hotel Statler, Detroit, Mich., Feb. 26-27.

**Nat'l Electrical Mfrs. Assn.** Edgewater Beach Hotel, Chicago, Ill., March 9-12.

**Nat'l Assn. of Corrosion Engineers,** 1953 conference, Chicago, Ill., March 16-20.

**Amer. Trade Assn. Executives,** Spring meeting, Mayflower Hotel, Washington, D.C., March 19-20.

**Magnesium Assn.,** first Internat'l Magnesium Exposition, National Guard Armory, Washington, D.C., March 31-April 2.





*These bearings last longer than life . . . grease life*

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**TRI-CLAD MOTOR BEARING IS EASIEST TO REGREASE.** Do it on the job, with motor running . . . no dismantling . . . no trip to a service shop.

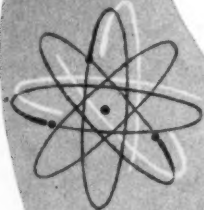
**TRI-CLAD MOTOR BEARING IS BETTER PROTECTED.** Completely enclosed housing has *longer seals* to keep dirt out, *larger grease supply*, and *scientific design* for continual grease migration.

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752-18

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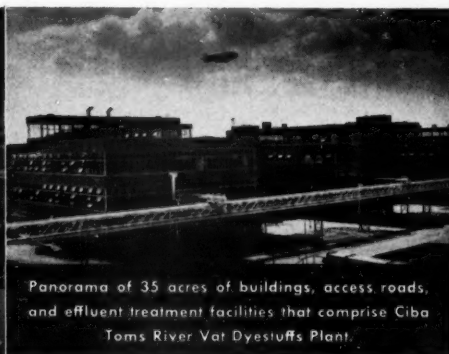
## *The fabric of* AMERICA

*Woven strong in face of repeated challenges to our nation's spiritual and material resources, the heritage of our institutions and national unity remains the rallying point for the hopes of the free peoples of the world.*

*Because the responsibility of such leadership must be met with more than words, technological advancement and expansion of production capacities of the nation's industries must continue unabated to serve the needs of domestic and world markets, and our national security.*

*To this end, Ciba's newest plant, the most modern of its kind for the production of vat colors of superior light-and-wash-fast qualities, will be dedicated. Soon to be in full-scale operation, "Ciba Toms River" will serve an important need, and take its place with other long-established Ciba enterprises serving both industry and public health in peace and war.*

Part of a battery of condensation kettles especially designed for the new plant by Ciba engineers.



Panorama of 35 acres of buildings, access roads, and effluent treatment facilities that comprise Ciba Toms River Vat Dyesuffs Plant.

**CIBA**  
*builds to serve*

**PROGRESS REPORT #4** in a series to tell the story of Ciba's expanding facilities for service.



NEW JERSEY

## NEWSLETTER

Enough annual reports have now been issued to show a trend—and it's invariably toward lower profits. The sales trend is mixed; some companies showed higher figures in 1952 than in 1951, some lower. But even higher sales were as often as not accompanied by lower net after taxes. The answer seems to boil down simply to a higher cost of doing business coupled with price ceilings imposed either by the government or by competitive exigencies.

The only profit increases are in second-half figures from Davison Chemical and International Minerals & Chemical. The former's net was up 35.9%, from \$0.65 million to \$0.88 million, on sales rising 11.1% from \$18.5 million to \$20.5 million. The latter's net rose from \$1.70 to \$1.72 million (1.2%) on sales rising from \$31.8 to \$35.7 million (12.2%).

Union Carbide and Pennsalt showed sales rises for the whole year, but their net declined. Carbide's sales: \$927.5 million in 1951, \$956.9 million last year (up 3.2%); but net was down 5.4%, from \$103.9 million to \$98.3 million. Pennsalt's sales rose a spectacular 20.8%—from \$47.6 to \$57.5 million; but they went for naught as far as profits were concerned—\$3.54 million in 1951 vs. \$3.22 million last year (down 9.2%).

Atlas Powder showed little change. Sales rose from \$51.7 to \$53 million (2.5%); net fell from \$2.03 to \$2.02 million (down 0.5%).

Five firms wrote minus signs on both sales and profits. Here are 1951 and 1952 sales, percent decline; 1951 and 1952 profits, percent decline, respectively:

Hercules Powder: \$222.5 and \$187.5 million (down 15.7%), \$13.7 and \$11.2 million (down 18.3%).

Allied Chemical & Dye: \$502 and \$490 million (down 23.5%), \$40.5 and \$40.3 million (down 0.5%).

Diamond Alkali: \$80.8 and \$76.7 million (down 5.1%), \$6.67 and \$5.46 million (down 18.3%).

Hooker Electrochemical: \$39.7 and \$36.5 million (down 8.1%), \$3.58 and \$3.03 million (down 15.4%).

American Cyanamid's tentative figures: \$389 and \$368 million (down 5.4%), \$34.8 and \$26.6 million (down 23.5%)—although the figure is distorted by the firm's non-recurring \$5.9 million profit in 1951 from sale of Southern Alkali.

Wage and salary decontrol may not only raise still further the cost of doing business, but in some areas it may also hike capital construction costs as well. Four localities are labor-short now—Hartford, Conn.; Wichita, Kan.; Battle Creek, Mich.; and Savannah, Ga.—and contractors there may have to raise wages to keep their construction workers from seeking greener grass elsewhere. Hence many jobs will likely prove more costly.

Another decontrol consequence for chemical firms: bidding for graduating chemists and engineers next June will go higher than ever. There's still a big demand for engineers of all kinds, and the U. S. Employment Service has figures to show it. The number sought in December and January rose 21%—a time when the call for skilled, non-technical workers fell off.



Twelve places are still open on the 30-man tour organized by Stanford Research Institute to visit technical and research centers in Italy, France and Switzerland. Prompted by requests from industrial research executives for a first-hand look at Europe's facilities, the tour (see p. 32) will be led by Weldon Gibson, director of SRI's economics research and manager of its international division. The group will leave New York April 22 on the Queen Elizabeth, will return from Cherbourg June 3. Cost: at least \$2,600 each.

Fanning industrialists' interest: SRI Director Jesse Hobson's enthusiasm, reported by CW last year ("Should You Invest in Foreign Research?").

Totting up its research accomplishments before the new Congress votes on the next fiscal year's budget, the U. S. Department of Agriculture this week pointed with pride to its fiscal 1952 results:

- Development of chemicals to flameproof cotton.
- Material contributions to the production of synthetic blood plasma from the starch-like chemical, dextran.
- Powdered orange juice—still in the testing stage.
- Hydrogen peroxide-oxidized animal oils suitable as vinyl plasticizers, now being made commercially.
- Shoe soles from leather tanned with U. S.-grown tanning agents, now undergoing wearing tests.
- A new "filtration-extraction" process to make cottonseed oil, and adaptable to rice bran and soybean oil production.
- A body-conforming bandage produced by shrinking gauze in caustic soda, now being made commercially.
- Synthetic lubricants and hydraulic fluids from turpentine.
- Development of domestic sources of cortisone steroids.
- A hard white wax similar to carnauba from rice bran oil.

Leading the crocuses by a few weeks are chemical company promotions aimed at home gardeners:

Hercules Powder says a special type of carboxy-methyl cellulose will be formulated by several makers into soil conditioners—in time for spring planting. CMC-based conditioners, says Hercules, are especially useful on soils with a high clay content.


Florida newspapers are full of full-page ads for liquid fertilizers. Stressed by many purveyors is the presence in their formulations of vital trace elements in addition to the usual nitrogen-phosphorus-potash combination. It's likely a trend, for Florida promotions are often echoed up North at a later date.

"Excessive cost" of fertilizer is an allegation pinpointed for Congressional investigation. Rep. E. C. Gathings (D., Ark.) wants to set up a study which would review Tennessee Valley Authority's operations. His object: to give TVA wider latitude than it now has, permit it to sell fertilizer anywhere in the U.S. for any purpose. His plaint is that cotton farmers are getting less money (33¢ this year, 40¢ last year), but must pay \$100-\$110/ton for ammonium nitrate (which TVA sells for \$68).

But Gathings will run head-on into other Congressmen, who'd rather see a shrinkage than an expansion of Federal operations.

Imperial Chemical Industries' sales setup in the U. S. will be reshuffled next month. Jeffrey Henriques, now an Arnold, Hoffman (ICI subsidiary) vice-president, will set up a firm under his own name and take over plastics and resale chemicals from Arnold, Hoffman & Co.

**. . . The Editors**



*headquarters*  
for

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**M**UTUAL'S huge Baltimore plant houses the most modern equipment for the production of Chromium Chemicals in large quantities. The combination of a highly skilled technical staff together with modern manufacturing methods has resulted in the production of the highest quality chemicals from Chrome ore. Make Mutual your Headquarters for Chromium Chemicals.

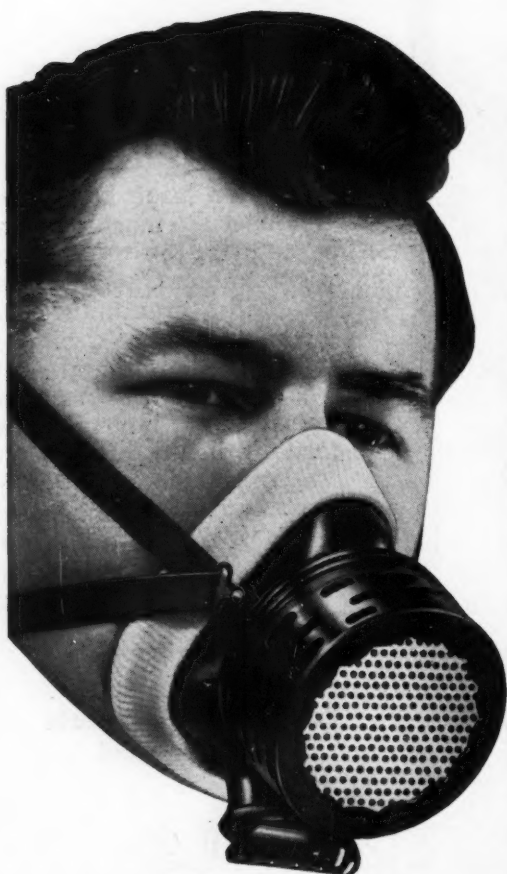
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(Quickly Interchangeable)

## Protect against Dusts, Gases and Vapors WITH THE AO R2000 RESPIRATOR

When a variety of hazardous vapors, gases or dusts are a problem, you can now simplify the protection and save money by standardizing on the AO R2000 Respirator. Its single, basic face piece accommodates four chemical cartridges of NON-SPARKING metal and three dust cartridges which, while light in weight for comfort, have maximum filtering capacity. CARTRIDGES INTERCHANGE WITH A TWIST OF THE WRIST—one twist removes outer cover, a second replaces it. Respirator may also be used with highly efficient, chemically-treated disposable dust filter.

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\*WITH R31 CARTRIDGE — For low concentration of light organic vapors and gases in paint spraying, degreasing, dry cleaning, cementing, etc. Absorbs vapors of benzene, xylene, toluene, gasoline, naphtha, acetone, turpentine, etc.



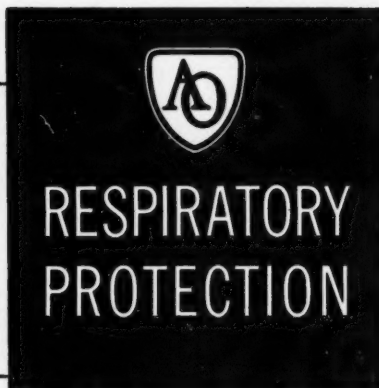
\*WITH R32 CARTRIDGE — For low concentrations of acid gases, mists — sulphuric acid, hydrogen chloride, etc. Used in plating, pickling operations and similar.



\*WITH R33 CARTRIDGE — For low concentrations of combined acid and organic gases such as halogenated hydrocarbons, carbon tetrachloride, acetic acid. Protects in degreasing operations, etc.



\*WITH R34 CARTRIDGE — Protects against nuisance concentrations of ammonia.



# RESPIRATORY PROTECTION



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\*WITH R17 CARTRIDGE — For all dusts not significantly more toxic than lead. (BM-2136)

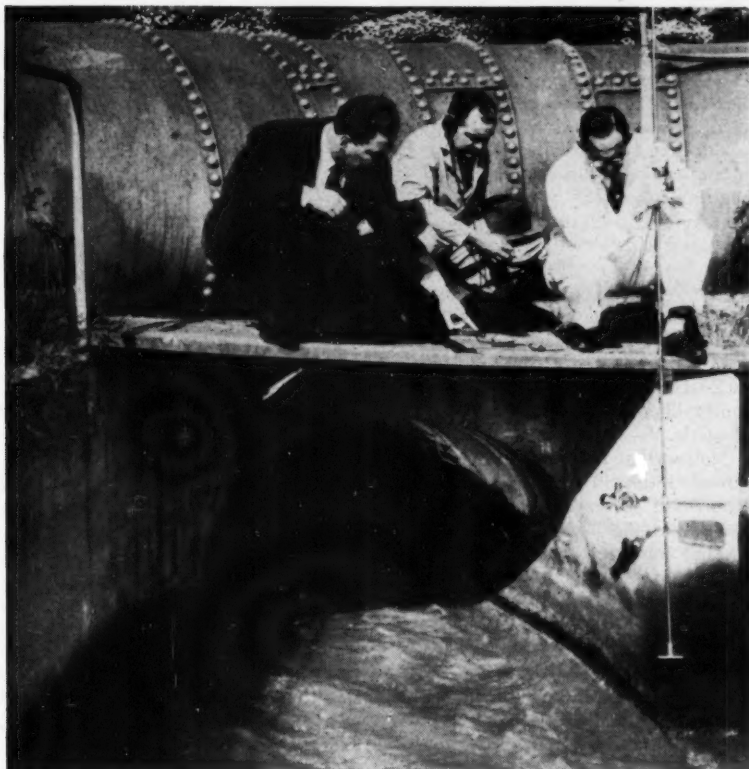
### QUICK RESPIRATOR FACTS

- Face mask molded from pliable rubber.
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- Inhalation valve of pure gum rubber freely admits air at lightest intake of breath, seals tightly on exhalation.
- Exhalation valve cannot stick, completely expels air—moisture cannot collect, dust cannot enter.
- Disassembly for cleaning is easy without special tools.





## BUSINESS & INDUSTRY . . . . .



**DIAGNOSIS FOR PURITY:** Chemical analysis and ordinary "nose test" provide factual basis for coming conventions on stream and air pollution.

### Ganging Up On Grime

With important meetings on this subject scheduled for New York this week, Detroit next week, New Orleans in April and Baltimore in May, this year may be remembered by the chemical processing industries as the one in which nation-wide attention to problems of air and water pollution flared into first magnitude.

Law suits on pollution are pending in some states, legislatures are enacting or revising pollution control laws in others, all testifying to the fact that never before has the public been so aroused about pollution.

The Paley Commission has called on industry to check the loss of valuable materials that are blowing away through smokestacks and leaking away through waste outlet pipes; public health agencies are vowing to "get tough" with pollution law violators;

and several large cities are struggling to overcome embarrassing water shortages—embarrassing because those cities lie on the banks of large rivers, but the rivers are poisoned beyond redemption with industrial wastes.

**M-Day for Industry:** Faced with these problems, industry is mobilizing for an offensive on all fronts—research, pooling of technical information, co-operation on community relations, and joint action in supporting legislation that would help lick air and stream pollution.

First of the year's principal conferences on this situation is that of the National Council for Stream Improvement, Inc., an organization sponsored by the pulp and paper industries. Meetings have been in session all this week in New York's Waldorf-Astoria Hotel, with panel discussions on kraft

mill wastes, sulfite waste liquor, stream recovery, semi-chemical wastes and "white water."

Next in line will be the industry's conference on air pollution abatement to be held in Detroit's Hotel Statler next Thursday and Friday under the sponsorship of the Manufacturing Chemists' Association.

Both air and stream pollution will be discussed at the conference set for April 20-21 in New Orleans, arranged by the Southern Association of Science and Industry. "Our objective," says SASI President James F. Crist, "is to continue the South's rapid industrial development without accumulating serious pollution problems similar to those that now exist in regions that were industrialized without adequate planning."

The 46-year-old Air Pollution Control Association will hold its next meeting May 25-28 in Baltimore, with a program that will include reports on measurement of air pollution and radioactive contamination. Problems peculiar to the railroad, oil and coal industries will be reviewed, and a representative of Stanford Research Institute will report on research on California smogs.

**Pollution in the News:** One gauge of increasing public concern about pollution is the number of news articles on this subject appearing in the nation's newspapers. Often these articles are serious in tone, relatively complete as to detail, and prominently displayed. Examples are legion:

- "Pollution in the Tennessee River system has increased by at least 35% between 1941 and 1951," says Dr. O. M. Derryberry, director of health for the Tennessee Valley Authority. "To correct conditions caused by 10 large sources of pollution would require \$20 to \$25 million in capital investment. The U.S. Public Health Service estimates that an abatement program covering the entire valley would cost up to \$57 million."

- "Philadelphia householders and businessmen are paying out more than \$10 million a year in damages caused by air pollution, according to an estimate made by John L. Hodges, chief of the air pollution control division of the city's Department of

## BUSINESS & INDUSTRY . . . . .

Health. He said \$9 million goes for laundry and cleaning, repainting and roofing repairs. The other \$1 million goes for medical expenses for illness due to air pollution and for store stocks spoiled by pollutants."

• "Industry paced Michigan municipalities in accepting responsibility to clean up the state's waters. The Utilex Manufacturing Corp. of Fowlerville and Universal Die Casting Co. of Saline both agreed to meet minimum pollution limits as set by the Water Resources Commission."

**Brawl Over Smoke:** In some communities, pollution has become something of a political controversy, and public officials vie with each other for public favor by trying to show the most truculent "get-tough" attitude toward industry. When New York City expanded its anti-pollution organization from the old Smoke Control Bureau to the new Air Pollution Control department last November, the former director, who had acquired a reputation as a "go-easy-on-industry" man, was dropped from the setup. Commissioner of the new agency is Dr. Leonard Greenburg, formerly director of the New York State Industrial Hygiene Division.

Citizens in Los Angeles, Pittsburgh and many other large cities have been agitating for years about smoke and smog conditions, but possibly the hottest battle on this subject at present is the feud in Louisville, Ky., between West End residents and the factories of the "Rubbertown" district. Latest move: two West End aldermen drove through the factory district, took particular offense at the plume of white smoke coming from the stack at National Carbide's plant, stalked into Third District Court and swore out a warrant charging that National Carbide was violating the new state law on air pollution.

One month earlier, the City-County Health Board hired attorney James W. Stites, former chief justice of the Kentucky Court of Appeals, to steer its enforcement campaign against pollution. At about the same time, engineer Richard B. Engdahl of Battelle Memorial Institute promised that his organization's study of air pollution in Louisville would not be a "whitewash" of the local industries. He said Battelle is a nonprofit organization now engaged in \$12 million worth of research, and that it "hardly would jeopardize its reputation by selling out for \$50,000."

**Interstate Action:** In the realm of water pollution control, cooperation

between states has appeared to be an effective approach. Outstanding in this field is the Ohio River Valley Water Sanitation Commission, members of which represent Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia.

This interstate agency's industry action committees are becoming known as valuable sources of information on pollution control. For example, the steel industry committee has found three methods of chemical oxidation treatment to cut down on phenol contamination, and the chemical salts committee has sponsored investigation of effect of wastes on a heavily polluted stream.

Amateur fishermen make up one of the major organized sources of opposition to use of streams for disposal of industrial wastes. At Beaumont, Texas, the Gulf Coast Rod, Reel & Gun Club initiated a check into plans of East Texas Pulp & Paper to build a multimillion-dollar paper mill near Evadale.

Noting that the lower Rouge River already is devoid of fish life, the Michigan State Water Resources Commission is holding Ford Motor Co. to its present discharge rates to prevent further pollution in the Detroit River. Ford's waste disposal limits now are 600 lbs. of phenol per day, 200 lbs. of cyanide, and 1,600 lbs. of ammonia.

On all sides, there are indications aplenty that the country is impatient for action. One new bill in Congress would permit rapid tax write-offs for installation of waste treatment facilities; another would provide funds for air pollution research; the American Municipal Association recommends tax relief for industries installing smog-control equipment; downstream residents of one North Carolina community are threatening to sue an upstream city for allowing its factories to dump waste products into Buffalo Creek.

The conferences to be held this year in Detroit, New Orleans and Baltimore will give industry its chance to show whether it intends to take the initiative in reducing pollution across the nation.

## EXPANSION . . . . .

**Ferromanganese:** Tennessee Products & Chemical Corp. is carrying out a \$2½ million expansion of its facilities in the Chattanooga area.

Among the projects: it will double electric furnace capacity for producing ferromanganese; it will open a new plant to manufacture anti-boll weevil insecticides.

Further, operations will start March

1 at a plant designed to produce another insecticide, slated for sale to dairies and vegetable and fruit growers, as well as for household use.

And around May 1, a third plant is scheduled to start turning out trichlorobenzene, used as a carrier for insecticides, as a cleaning solvent, and as a transformer oil.

## COMPANIES . . . . .

**Diamond Alkali Co.'s** \$15 million issue of 3½% debentures, due Feb. 1, '78, has been placed on the market (CW, Feb. 7).

Diamond will use the net proceeds to pay \$5.8 million of short-term debt, for plant improvement, and for further diversification of its products.

The debentures will have a sinking fund, beginning in 1957, calculated to retire 65% of the issue prior to maturity prices.

**Hooker Electrochemical Co.** has offered its common stockholders rights to subscribe for a new 97,147-share issue of cumulative preferred stock at \$100 a share. The rights, which expired Feb. 18, entitled common stockholders to purchase one share for each 10 shares of common stock held.

Proceeds, with other general funds, will finance the company's expansion program and provide additional working capital.

**New office buildings** scheduled for construction are in the news this week.

• **Sinclair Refining Co.** will build the second new major office building in Chicago in the past 20 years. Plans call for: expenditure of \$5 million, 10 stories in office space, air-conditioning throughout.

Sinclair will christen it the Sinclair Building, expects to occupy six floors. All Midwest offices will be consolidated in the new structure, and some offices may also be transported from New York.

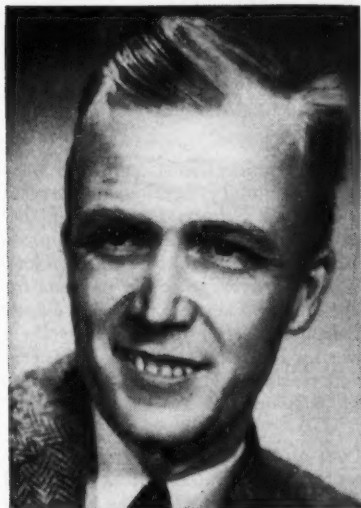
Cost of the site was reported at \$265,000.

• **Atlas Powder Co.** will build an office building "not exceeding three stories" in Wilmington, Del.

The contemplated structure will house the company's 400 administrative personnel. Present plans, however, do not call for the removal of any laboratory or manufacturing activities from Atlas Point.

• **American Alcolac Corp.**, Baltimore, has purchased the buildings and land on Fairfield Rd., Baltimore, from the U.S. Industrial Chemicals Co.

American Alcolac formerly leased this property from the seller.



McILWAIN, BARRETT, BRUYEA: North of the border, the same inter-union rivalry.

## Under Two Flags

Maybe it's the climate, or maybe it's a national character trait, but whatever the reason, employees of Canadian chemical processing companies have greater "sales resistance" to labor unions than their Yankee brethren.

While unionization of chemical workers in the United States now stands at about 50%, only around 35% of CPI employees in Canada are organized. And for the three big labor unions that are operating under both the U.S. and Canadian flags in this industry, recruiting of new members has been relatively slow sledding in Canada compared to their rates of growth south of the 49th parallel.

**No Lack of Try:** Only about 19,000 of Canada's approximately 52,000 CPI employees were members of labor unions as of Jan. 1, according to records of Canada's Department of Labor; but it would be hard to pin the blame for that showing on any lack of hustle on the part of the unions' paid organizers. They're moving at top speed trying to out-do each other, but they all seem to run up against the same kind of reluctance on the part of their prospective members.

Most successful organizer in the field up to now has been Gordon McIlwain, from Sarnia, Ont., whose efforts during the past four years have helped the International Chemical Workers Union (AFL) attain a Canadian membership of more than 10,000 individuals in some 60 locals. Now well known in Canada as an outspoken enemy of Communistic and other political in-

fluences in labor unions, McIlwain has considerable background in the industry for a man still in his mid-30's. He worked for 12 years in paint and acid plants, was then employed for five years by Canadian Synthetic Rubber Co.

Assisted by eight international representatives—four in Ontario, two in Quebec, one in British Columbia and one in the prairie provinces—McIlwain has boosted his following by about 30% in the past two years. He credits much of this growth to part-time proselyting by rank-and-file members, and also lauds the ICWU research and education department for its educational drive. His union also benefits by its affiliation with the Trades & Labor Congress of Canada.

**Erstwhile Miner:** Heading up the Canadian enlistments campaign for District 50 of the United Mine Workers of America is 67-year-old Silby Barrett of Toronto, one of the most aggressive union organizers in Canada. A native of Newfoundland, Barrett grew up in Glace Bay, Nova Scotia, and became a leader in UMWA's District 26 headquarters there while still a young man.

Since then, Barrett has held a long list of UMWA posts in Canada. These days, he's on the road almost continually trying to drum up more District 50 memberships among chemical workers. Aided by an undisclosed number of international representatives, Barrett has brought his union's enrollment of chemical employees in Canada to about 6,000.

One advantage held by Barrett in the inter-union competition: Although most CIO unions are affiliated with the Canadian Congress of Labor, the CCL recognizes District 50 instead of CIO's United Gas, Coke & Chemical Workers as having jurisdiction in the chemical field. Accordingly, Gas-Coke works in Canada under the handicap of not having a tie with a Canadian federation. This situation is extremely distasteful to Gas-Coke and somewhat embarrassing to CCL, which has been trying to bring about an "understanding" between the two unions, but nobody expects District 50 to give up its vantage point.

**Under Financial Strain:** Not only is Gas-Coke having difficulty in making progress in Canadian membership, but it is also finding it difficult just to hold its own there. So far, Gas-Coke has about 2,000 Canadian members in nine locals, all in Ontario, and the total hasn't changed noticeably in the past year.

Because of increased operating expenses, the international union hasn't been able to pay the salary of a field representative to service the Canadian locals; in recent months, those local unions have been making extra payments to finance that service "until the international union is in a position to take over that obligation again."

However, Gas-Coke is not giving up. At the recent meeting of its Canadian district council, Gas-Coke's new president, Elwood D. Swisher, declared that "Canada is the most fertile field for organization of unorganized workers on the American continent," and held out hope for increased organizing efforts there. Director of the



union's Canadian district is Aubrey F. Bruyca of Sarnia, Ont., whose energy and enthusiasm still haven't been sapped by the tedium of what amounts to a virtual stand-still.

**Home-Grown Union:** A third labor federation in the land of the maple leaf is the Canadian and Catholic Confederation of Labor, strength of which is concentrated in the French-speaking province of Quebec. CCCL has a total of about 90,000 members, compared to about 525,000 for the AFL-oriented TLC and about 332,000 for the generally pro-CIO Canadian Congress of Labor.

Last month, a group of CCCL locals joined hands to form a new chemical labor union under CCCL affiliation. Known as the National Federation of Chemical Industry Workers, it claims a membership of 3,500, is headed by M. G. E. Hebert, an employee of Shawinigan Chemicals. Latest Department of Labor figures indicated that there are about 10 chemical labor contracts with CCCL locals, covering not more than about 1,000 workers.

It's clear that labor unions don't bulk so big in Canada's chemical industry as they do south of the border. There were no long or tumultuous strikes in the field last year, and nearly two-thirds of the industry's employment still is untouched by unionism. One possible retarding effect on union organizing in Canada may be the presence of a considerable pool of unemployed persons, despite continuing industrial expansion. But notwithstanding the Canadian workers' coolness toward unions up to now, organizers like McIlwain, Barrett and Bruyca are energetically beating the bushes for new members, each trying to make his Canadian following a source of strength and not a liability for his international union.

## LEGAL . . . . .

**FTC Irked by Ads:** In a second action against the makers of Chesterfield cigarettes, the Federal Trade Commission has issued a complaint charging that Liggett & Myers advertisements falsely represent that Chesterfields will have no adverse effect on nose and throat. FTC also is provoked at ads terming Chesterfield smoke "milder, cooler, less irritating" than smoke of other cigarettes. FTC is asking an injunction to stop those advertising claims pending FTC's hearings and final order.

**Clash on Pricing:** Whether the prices charged by Standard Oil of Indiana to gasoline distributors in Detroit were "discriminatory" or "competitive" is

## DPA's LATEST TAX WRITE-OFF LIST

Company, Location	Product	Amount Certified	% Certified
Food Machinery & Chemical Corp., Carteret, N. J.	Potassium phosphates	\$119,350	45
Koppers Co., Inc., Fallsburg, W. Va.	Chemicals from coke ovens	470,000	40
E. Rauh & Sons Fertilizer Co., Tuscola, Ill.	Nitrophosphate fertilizers	1,928,500	75

the bone of contention in an FTC case that appears apt to bounce up to the U.S. Supreme Court again. Four dealers bought the fuel at rates about 1¢ less than those charged other jobbers, according to testimony. Case history: Original complaint filed, 1940; FTC cease-and-desist order, 1950; Supreme Court directive to FTC to take evidence on whether company acted in good faith, 1951; and now, FTC by 3 to 2 vote still thinks pricing system was an anti-trust violation. Stanolind, criticizing the split decision from a dozen angles, retorts: "Of course we will appeal from this arbitrary action by the Commission."

**Victory Is Painful:** Also at odds with the FTC is H. H. Hoyt, president of Carter Products, Inc. After the U.S. Court of Appeals overruled an FTC order that forbid use of the word "liver" in connection with Carter's Little Liver Pills, Hoyt commented: "This litigation has cost us nearly half a million dollars and we have no way of recovering it against the Government. It has probably cost the taxpayers an equal amount—with no corresponding benefit to the public."

## LABOR . . . . .

**Plutocrats in Plastics:** A third group of chemical employees has moved into the \$80/week bracket, and all average wage rates in the chemical processing industries are up another cent/hour or so, according to latest figures from the Bureau of Labor Statistics.

Newly arrived in the \$80/week category are the plastics workers, whose average weekly wage rose by more than \$2 to an \$81.65 level. Already in this top stratum were the people employed in synthetic rubber and soap and glycerine factories, whose November wages averaged \$82.70 and \$84.70/week, respectively.

For the entire CPI, average weekly wages climbed by 68¢ that month to \$72.15, compared to a \$70.78/week average for all manufacturing industries. Hourly pay rates now average \$1.726 in the CPI, .8¢ above the all-manufacturing average.

But word from another government agency points up the fact that chemical wages have not been ascending as rapidly as those in some other industries. In one of its dying gasps, the

Wage Stabilization Committee used figures on total general wage increases in certain industries since V-J day (Aug. 14, '45) as grounds for approving a 10% boost for shipbuilders. While the average hourly pay rate for chemical workers was up 73.7¢ over that period; pay for rubber workers was up 76¢; steel workers, 78.5¢; coal miners, about \$1.02; and oil workers, \$1.06/hour.

**Lion on the Loose:** The roar that recently reverberated across the land didn't come from the lions in the nation's zoos; it was the voice of John L. Lewis, long-time president of the United Mine Workers, vehemently proclaiming his opinions in the current issue of his UMW journal. This month, his opinions bear on the CPI:

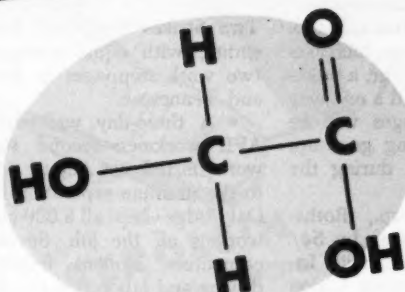
• Congress should not hesitate to carry out the recommendations of former Secretary of Interior Oscar Chapman; "the time to develop a synthetic-fuels industry is now." Seeing in such an industry a new market for the coal that his members are digging, Lewis urges that Congress authorize funds for more research and also provide government help for private companies building prototype plants. "The international situation being what it is," Lewis thunders, "a delay by Congress, yielding to oil-industry lobbyists and short-sighted economy, in this case would be inexcusable."

• Another federal agency winning John L.'s stamp of approval is the Food & Drug Administration, now restricted in its operations by the recent Supreme Court ruling that FDA does not have authority to inspect food and drug factories without management's permission. Lewis says this is the result of "loophole legislation" that stands out as "brazen negligence by a lazy, uninterested Congress." Lewis thinks it's a "sure bet" that remedial legislation can come only by public demand, so he urges "every housewife and citizen" to take up the cudgel.

**Fertilizer Wages Up:** Among latest chemical labor contracts, two call for fairly steep pay rate increases at fertilizer plants.

• Virginia-Carolina Chemical is granting pay rises ranging from 5 to 14¢/hour, retroactive to Dec. 1, to the 275 employees at its plant in Mount Pleasant, Va. The two-year

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Concentration Wt. %	pH at 25° C
0.5	2.5
1.0	2.33
2.0	2.16
5.0	1.91
10.0	1.73

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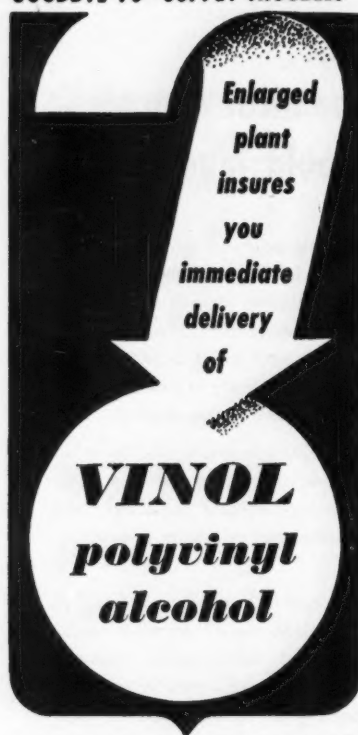
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Insolubles (in water)	1.0% max.	1.0% max.
Volatiles	5.0% max.	5.0% max.
Ash	2.0% max.	2.0% max.
pH	6-8	6-8
Viscosity (4% in water)	20-30 cps	35-50 cps
Gel characteristics	Non-Gel	Non-Gel
Color	White	White



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Manufacturers of VINOL Polyvinyl Alcohol—VINAC Polyvinyl Acetate in Solid, Solution and Emulsion Form—Phenol Formaldehyde Solutions

## BUSINESS & INDUSTRY

contract with the International Union of Mine, Mill & Smelter Workers contains a one-year wage reopening clause.

- Simplot Fertilizer Co. and the Oil Workers International Union (CIO) have signed their first contract covering employees at the Pocatello, Idaho, plant. It provides for wage increases ranging from 6 to 27½¢/hour, a union shop, six paid holidays, and a one-way escalator wage plan; wages will be raised if the cost of living goes up, but wages won't be cut during the life of the contract.

- Salvo Chemical Corp., Rothschild, Wis., is raising wages by 5¢/hour under its new contract with International Chemical Workers Union (AFL). On March 15, June 15 and Sept. 15, there'll be additional wage hikes if the cost-of-living index rises a certain number of points. In case of a death in the family, a worker will get three days off.

- Another wage reopener resulted in wage increases of 2½¢/hour for women and 5¢/hour for men at the Fairmount, Va., plant of Minnesota Mining & Manufacturing. Since 3-M signed the current contract with United Gas, Coke & Chemical Workers (CIO) in November, '51, wages have been boosted by totals of 14½¢/hour for men, 11½¢/hour for women.

- National Carbon will raise all hourly wages by 2¢ and increase equity and bonus rates for certain job classifications at its plant in Clarksburg, W. Va. For example, graphite furnace unloaders will receive a 15% rise in bonus rate, so they'll receive about 68¢/hour above base rate, on the average.

**On the Strike Front:** One new strike was in the CPI news this week, while several other strikes dragged along with all parties decidedly unhappy.

- Although the company's offer of a 5¢/hour pay increase is o.k. with employees at six plants of American Viscose Corp., about 1,000 members of the Textile Workers Union (CIO) are on strike at the plant in Nitro, W. Va., still asking for a 15¢ increase. TWU said the company's terms would bring basic wage rates to an average of about \$1.70-73/hour.

- There's been no further violence lately in Elizabeth, La., the little company-town where some 550 AFL workmen have been on strike since Sept. 13 against two jointly owned paper mill companies, Calcasieu Paper and Southern Industries; but both sides are wary and watchful, and feeling still runs high. Union and man-

agement lawyers are fencing in court over a company attempt to evict 36 strikers from their company-owned homes. The NLRB and the state mediation board are expected to enter the scene this month.

- **Two Strikes End Fast:** Starting and ending with equal abruptness were two work stoppages in Pennsylvania and Tennessee.

- A three-day walkout by 1,000 AFL workmen—second strike since work started last August on additions to the uranium separation facilities at Oak Ridge—kept all 3,000 construction workers off the job. Seven hundred carpenters, cement finishers, truck drivers and laborers returned to work voluntarily; their gripe was that a subcontractor had not been paying double-time for overtime. Three hundred operating engineers, who were annoyed at another subcontractor for not assigning standby engineers to watch automatic pumps, were ordered by their union to go back to their jobs pending settlement of the dispute.

- A whirlwind strike, reportedly over job standards in one department, stopped production work for about one day at the plant of Consolidated Molded Products Corp. at South Seranton, Pa. The 425 production workers, represented by Bakelite, Liconite & Phenolic Federal Labor Union (AFL), left their jobs suddenly and without union authorization. The issue was settled the next day in a conference between company and union officials.

## FOREIGN

**Soda/Netherlands:** A 60-million-guilder soda manufacturing plant is to be built at a point East of Delfzijl, Groningen Province.

The Dutch Government hopes to submit a bill soon providing for state financial participation in the new industry. Construction is slated before the end of this year.

Latest figures indicate that Holland's consumption of soda approaches 80,000 tons/year, most of which is imported from France. With an estimated production of 500 tons daily from the new works, Holland will thus be able not only to cover domestic needs, but will have enough surplus to build up an export market.

**Silicone Resin/Japan:** Shinetsu Chemical Industry Co., Tokyo, has concluded a tentative agreement with General Electric Co., Inc. on an assistance-for-royalty basis for the production of silicone resin. The agreement will become effective after it is



*Now available to industry!*

## ACROLEIN

$\text{CH}_2=\text{CHCHO}$

**FOR:**

**Pharmaceuticals**—methionine, 2-amino-pyrimidine, folic acid, and substituted quinolines.

**Odorants**—by Diels-Alder condensations.

**Coating Resins**—reaction with urea, thiourea, and polyhydric compounds.

## METHACROLEIN

$\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_2=\text{CCHO} \end{array}$

**FOR:**

**Copolymers**—with acrylonitrile, acrylic esters, and styrene—they have high softening points and good solvent resistance.

**Resins**—for impregnated fabrics, linoleum, and adhesives.


56.06	Molecular Weight	70.09
0.8427	Specific Gravity at 20/20°C.	0.8474
52.6°C.	Boiling Point at 760 mm. Hg.	68.0°C.
215 mm.	Vapor Pressure at 20°C.	120 mm.
<0°F.	Flash Point (Cleveland open cup).	5°F.
20.8% by wt.	Solubility in Water at 20°C.	5.9% by wt.
6.8% by wt.	Solubility of Water in at 20°C.	1.7% by wt.

**ACROLEIN and METHACROLEIN** are highly reactive intermediates. They undergo reactions characteristic of both unsaturated compounds and aldehydes. The conjugation that exists between the double bond and the unsaturation of the carbonyl group increases the reactivity of both groups. These groups can be made to react either simultaneously or individually—the ethylenic groups with halogens, halogen acids, 1,3 dienes, alcohols, and mercaptans—the aldehyde groups with anhydrides and dibasic organic acids, Grignard reagents, alcohols, and HCN. Acrolein and methacrolein are shipped containing 0.1 per cent hydroquinone to inhibit polymerization.

For further information on either of these materials call or write the nearest Carbide and Carbon Chemicals office *today*. Ask for the technical bulletins "Acrolein" (F-7389) and "Methacrolein" (F-7620). These bulletins will provide you with additional data on the physical and chemical properties of acrolein and methacrolein. They will also serve as a permanent reference for your work.

**CARBIDE AND CARBON  
CHEMICALS COMPANY**

A Division of  
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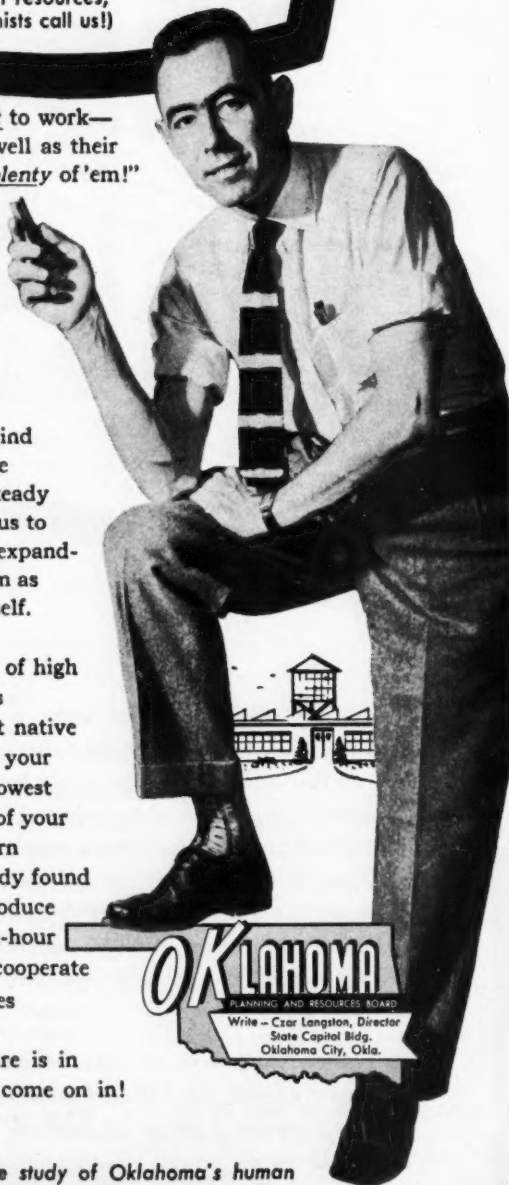


... people who want to work—  
with their heads as well as their  
hands! Well, we got plenty of 'em!"

It's true—Oklahoma  
has a large reserve  
of "Human  
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who have proved to  
large basic industry  
their quick, low-cost  
adaptability to any kind  
of industry. These are  
stable, industrious, steady  
people who are anxious to  
share in Oklahoma's expand-  
ing industrial program as  
the industrialist himself.

This unusual "pool" of high  
calibre manpower is  
virtually 100 percent native  
born and will meet your  
needs at the very lowest  
training cost. Many of your  
Eastern and Northern  
neighbors have already found  
that Oklahomans produce  
more goods per man-hour  
by their ability to cooperate  
and adapt themselves  
to mass production  
methods. Your future is in  
Oklahoma, too. So, come on in!  
The people are fine!

A complete study of Oklahoma's human  
resources as they relate to your problem,  
is available upon request. All such studies  
are held in strictest confidence.



**Make More Money IN OKLAHOMA**

## B&I . . . . .

approved by the Foreign Investment  
Review Commission.

Under terms of the agreement, GE  
will permit Shinetsu to use its patents;  
in exchange, Shinetsu will pay GE  
7% of sales plus \$5,000 annual royal-  
ties.

Shinetsu is also reported to be nego-  
tiating a similar agreement with Dow  
Corning Corp.

**Paints/Peru:** The Peruvian Govern-  
ment has increased the duty approxi-  
mately 100% on all imported paints,  
except lacquer paints.

The move is intended to guard the  
national paint industry, which has re-  
cently been demanding more tariff  
protection.

**Cellulose/Bulgaria:** First cellulose  
plant in Bulgaria has been placed in  
operation, according to Soviet dis-  
patches from Sofia.

Built under Russian supervision, and  
equipped with Russian machinery, the  
plant is reported to be able to supply  
the needs of all paper factories located  
in Bulgaria.

**Gypsum/Israel:** Rich deposits of gyp-  
sum were reported to have been dis-  
covered in the Elath, Sdom, and Beer-  
Sheva areas last week.

The deposits are described as very  
dry, with a 90% pure plaster content.

Manufacture of sulfuric acid is an-  
ticipated as a result of the discoveries.

## KEY CHANGES . . .

**Thomas C. Anderson and Graydon L.  
Walker:** To vice-presidents, Parke,  
Davis & Co., Detroit, Mich.

**Max A. Minnig:** To director of sales,  
Witco Chemical Co., New York, N.Y.

**A. C. Hobbie:** To manager, Corona  
Chemical Division, Pittsburgh Plate  
Glass Co., Pittsburgh, Pa.

**Lloyd L. Austin:** To a director, Ameri-  
can Potash & Chemical Corp., Los  
Angeles, Calif.

**James G. Baxter:** To assistant director,  
research, Distillation Products Indus-  
tries, division of Eastman Kodak Co.,  
Rochester, N.Y.

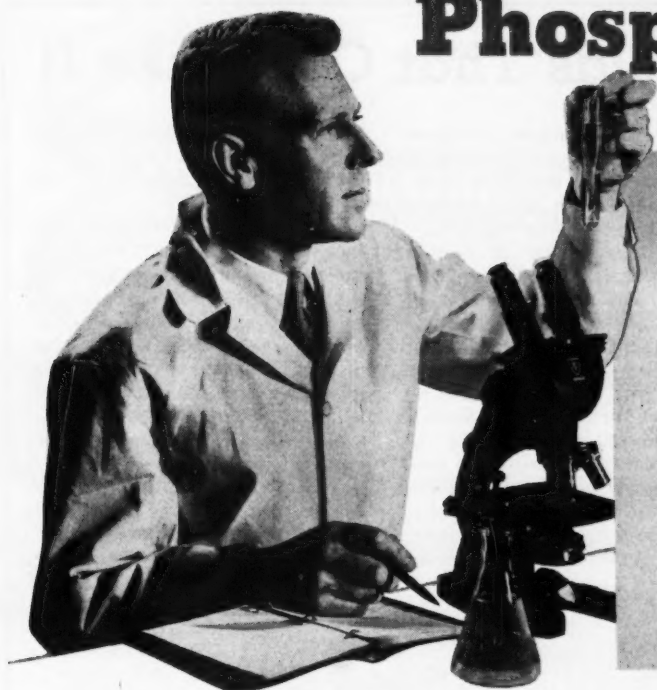
**John B. Okie:** To a director, Houdry  
Process Corp., Philadelphia, Pa.

## KUDOS . . . . .

**Joel H. Hildebrand:** 1953 Willard  
Gibbs Medal of the American Chemi-  
cal Society's Chicago Section, for re-  
search on intermolecular properties of  
solvents, to be presented at a meeting  
of the Chicago Section, Sept. 25.

# AA QUALITY

## Phosphoric Acid



*From MIRACLE DRUGS to SOFT DRINKS* ... Chemical of a thousand uses, AA QUALITY Phosphoric Acid, in its various grades, amply and consistently meets national formulary and pure food specifications. Made from 99.9% pure Elemental Phosphorus, produced by electro-thermal process in two modern A.A.C. Co. plants, using phosphate rock from our own mines. Utmost purity assured by rigid control from mines to finished product . . . dependable service assured by large-scale production and ample phosphate rock reserves. Good reasons for using AA QUALITY Chemicals. Note product list below—mail coupon for full information.

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#### PHOSPHORIC ACID

85% N. F. Grade • 75% Pure Food Grade  
50% Pure Food Grade

#### PHOSPHORUS AND PHOSPHOROUS COMPOUNDS

Elemental Phosphorus (Yellow-White)  
Phosphorus Red (Amorphous)  
Phosphorous Pentasulphide • Sesquisulphide  
Ferro Phosphorus (Iron Phosphide)

#### PHOSPHATES

Disodium Phosphate • Trisodium Phosphate  
Dicalcium Phosphate, PHOS-FEED® Brand

#### PHOSPHATE ROCK AND FERTILIZERS

All grades Florida Pebble Phosphate Rock  
Superphosphate • Complete Fertilizers

### Other AA QUALITY Products

#### FLUORIDES AND FLUOSILICATES

Sodium Fluoride • Ammonium Fluosilicate  
Magnesium Fluosilicate • Potassium Fluosilicate  
Sodium Fluosilicate • Zinc Fluosilicate  
Fluosilicate Mixture • Ammonium Fluoborate  
Aluminum Fluoride • Magnesium Fluoride

#### GELATIN

KEYSTONE® Gelatin: Edible, Photographic  
Pharmaceutical, Technical

#### OTHER PRODUCTS

Animal Bone Charcoal  
Bone Black Pigment (Cosmic® Blacks)  
Keystone Ammonium Carbonate  
Sulphuric Acid • Insecticides-Fungicides

*Florida pebble phosphate rock as it comes from our mines—source of Elemental Phosphorus and other AA QUALITY products.*



The American Agricultural Chemical Co.,  
Chemical Division, 50 Church St., New York 7.

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☐ Please send samples of following products:

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30 plants and offices serving U.S., Canada, Cuba



## Airfields That Can Take It

Jet planes are a tribulation to everyone—the pilot, who has to get used to flying at ever-new high speeds; the citizen, who has to revise his concepts of time and distance; and the designer of airfield pavements, who has to find new materials to stand up against jet fuel and the high temperatures (1,000 F) and tornado-like winds (1,200 mph) in the blast cones coming out of jet engine tailpipes.

These hydrocarbon fuels, unlike fast-evaporating aviation gasoline, lie on the airstrip, eating into asphaltic concrete and filler material in joints between slabs of Portland cement concrete. Blasts of hot air soften pavement, blow it away.

But one man's challenge is another's opportunity. The U.S. Air Force is turning to chemical companies for products to meet its new operating conditions. Although many manufacturers and formulators have research and tests in progress, none has yet come up with the final answer.

And no one can say what tomorrow's jet and rocket engines will do the pavement.

**Pay-Off for Pavement:** It is certain, however, that there's a big market ahead for chemical companies that develop jet-tough materials. A quick look at the AF's pavement program for this fiscal year shows how big: exclusive of the huge runway and taxiway areas, 18 million sq. yds. of aprons alone will be laid.

Portland cement concrete pavement is the only surfacing used on permanent fields for all tests and maintenance aprons. It generally withstands jet blasts, heat, and fuel spillage satisfactorily. And the pavement joints, when filled with special jet fuel-resistant materials, hold up well against fuel spills. Many firms have developed such fillers, a number of them formulated from coal-tar and rubber compounds. But maintenance of these materials against jet blast is still a problem.

For though they are resistant to fuel, they blow out when softened by the heat of a jet blast from a stationary plane. This happens mostly on test and maintenance aprons where jet engines run for 7-21 minutes at full throttle.

At permanent bases, the AF also

uses Portland cement concrete pavement on the 1,000 ft. "gunning" areas at the end of each runway. On the much larger yardage of runway between the end areas—and on taxiways—the AF accepts either Portland cement concrete or asphaltic concrete, whichever is cheaper. Since the asphaltic type is generally cheaper, it wins most of the jobs.

**Fuel-Proof Roof:** And because the cost of Portland cement surface is high—in continental U.S., \$2.64/sq. yd. higher than asphaltic concrete—the AF is still looking for a less expensive but durable pavement for test and maintenance aprons. All that is needed to make

Portland cement type, the AF could afford to spend 10 times as much for the cementing material and still come out ahead.

**Tops So Far:** Of developments now under test, the most significant are pointing to coal tar-synthetic rubber compounds as the best binder for the surface course. Coal-tar products are insoluble in petroleum distillates such as jet fuel. However, they have a narrow range of temperature extremes, softening in summer heat and becoming brittle even before freezing weather.

That's where additives come in. Synthetic rubbers blended with coal tar correct this deficiency. But the proportion of synthetic has to be



JET AIRCRAFT: A red-hot blast, a brand-new market.

the cheaper asphaltic concrete satisfactory for aprons is a jet fuel-resistant surface, or roof, to protect the main mass of asphaltic concrete pavement against the solvating and aggregate-stripping action of fuel.

The asphaltic concrete used on runways and taxiways has a 1½-2½-in. "binder course" made with a coarse aggregate, topped by a 1½-in. "wearing course" of dense-graded, hot plant-mixed asphaltic concrete. It can take today's 200-250 psi tire pressures, and the fuel spillage and blast from moving jets. But repeated spills, such as aprons are subjected to, chew it up.

Should the long-sought impervious, blast-resistant roof for this be too expensive, the wearing course could probably be reduced below 1½ in. As now laid, this surface layer contains 8-10 lbs. of asphalt cement per sq. yd. Price is low—1-1½¢/lb. Considering the overall saving on asphaltic concrete over

limited to avoid gumming up pumps, valves and piping in the high-production hot-mix plants used by contractors on the job.

Surface courses built with these cementing mixes appear to repel spilled fuel completely, and to resist blast heat for several minutes at partial power and at full throttle. But results are still tentative.

The manufacturer who wins an AF o.k., however, will win a nice piece of business too. This year, for example, a company with a proved cementing material for the top course probably could have sold 50 million lbs. to AF paving contractors. In that quantity, there might be 2 million lbs. of additive—synthetic rubber or other material.

This figure indicates the possibilities for an AF market alone without including Navy fields. And there is an equally large market on the verge of opening up in municipal and commercial airports.

*By the world's largest producer of synthetic detergent raw materials!*

DETERGENT ALKANE • DETERGENT SLURRY

DETERGENT D-40 • DETERGENT D-40 SF • DETERGENT D-40 FG

DETERGENT D-60 • PURIFIED SULFONATE L • PURIFIED SULFONATE LZ

SODIUM SULFONATE NO. 5 • WETTING AGENT • WETTING AGENT S

DISPERSANT NI-W • DISPERSANT NI-O

#### Other Oronite Products

Lube Oil Additives  
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Gas Odorants  
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Phthalic Anhydride  
Ortho-Xylene  
Polybutenes  
Xylol  
Aliphatic Acid  
Hydroformer Catalyst

## Investigate the complete, quality line of SURFACE ACTIVE AGENTS

Oronite is a major source of supply for a great number of different Surface Active Agents—each having special properties. Oronite products are priced competitively and have the high quality and uniformity you expect from the world's largest producer of synthetic detergent raw materials.

If you use Surface Active Agents in your processes, why not find out what Oronite can offer you. Write or phone the Oronite office nearest you for technical bulletins and full information.



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# New products and profits with Armour Chemicals

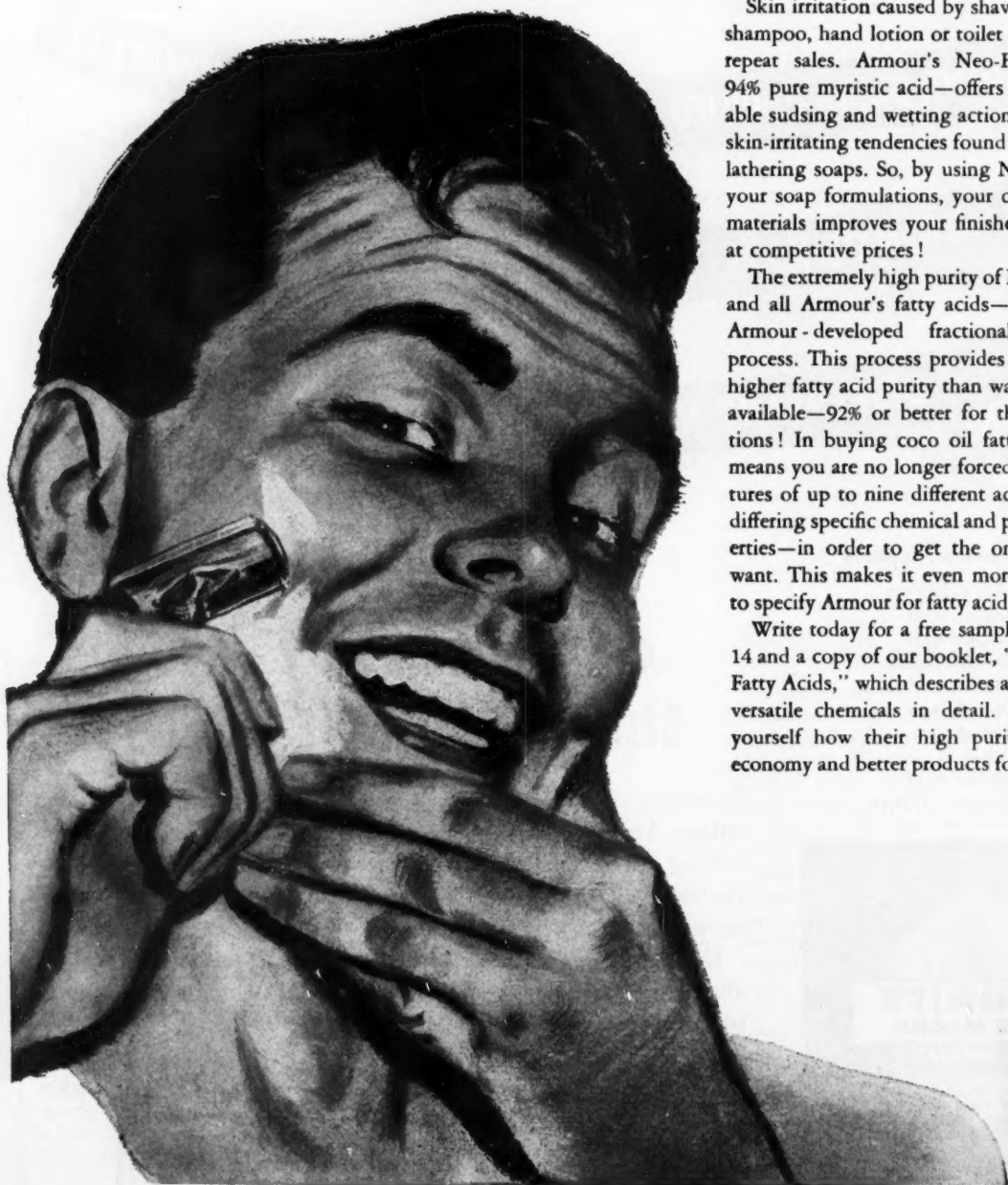
**Purity means economy to you —  
shaving comfort to him**

It's hard to put something new and different into shaving cream that men really want. But —with Armour's Neo-Fats®—it's easy to take something *out* of your shaving cream that no shaver wants—skin irritation.

Skin irritation caused by shaving cream or shampoo, hand lotion or toilet soap can kill repeat sales. Armour's Neo-Fat 14—over 94% pure myristic acid—offers you remarkable sudsing and wetting action without the skin-irritating tendencies found in most free-lathering soaps. So, by using Neo-Fat 14 in your soap formulations, your choice of raw materials improves your finished product—at competitive prices!

The extremely high purity of Neo-Fat 14—and all Armour's fatty acids—is due to an Armour-developed fractional distillation process. This process provides you with far higher fatty acid purity than was ever before available—92% or better for the coco fractions! In buying coco oil fatty acids, this means you are no longer forced to buy mixtures of up to nine different acids—all with differing specific chemical and physical properties—in order to get the one you really want. This makes it even more economical to specify Armour for fatty acids.

Write today for a free sample of Neo-Fat 14 and a copy of our booklet, "Coconut Oil Fatty Acids," which describes all six of these versatile chemicals in detail. Find out for yourself how their high purity can mean economy and better products for you.





## Can static on your plastics hurt your future sales?

### Arquads® provide an answer!

Static charges that build up on plastics can be a real source of dissatisfaction. On automobile seat covers made of woven plastic, for example, static can prove so uncomfortable that some women will refuse to buy them. Treating such plastic materials with low concentrations of Arquads—Armour's quaternary ammonium salts of fatty acids—may easily prove the answer.

Recently one of the largest chemical companies conducted a series of tests on Arquads 12 and 18 as destaticizing agents for polystyrene and Saran plastics. In their opinion, these Armour chemicals are two of the most effective destaticizing agents that they have tested.

The tests were conducted by applying

a 1% solution of each of the Arquads in a 50-50 mixture of isopropyl alcohol and distilled water to polystyrene wall tile. The treated sections were rubbed for one-half minute periods with dry cleaning tissue and examined for static charge. Both Arquads required more than 50 rubbings before the tile showed a charge.

Other tests, conducted with treated tile held at 130°F. for one week, indicated the effectiveness of Arquad 18 as an anti-static agent for polystyrene at elevated temperatures. Similar tests showed that both these Arquads worked as effectively on Saran as on polystyrene, both at normal room and at elevated temperatures.

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## Fresh from the printer and they didn't smear!

### That's Armid® anti-offset protection

In putting decorative coatings on glassware and ceramics, "anti-offset" is a powerful promise. These decorations are applied by running the object under a heated wire screen printer. It is then carried by conveyor belt to ovens where the decoration is permanently fused to the surface.

But that conveyor trip can mean high rejection rates—or costly hand work to make sure that the coating doesn't smear.

How to cut down on rejects due to smearing and pick-up of pigment from the conveyor? A small amount of Armid—one of Armour's high molecular weight, wax-like chemicals—provides "anti-offset" protection at very low cost. The Armid

permits the glassware to be transported directly from the printer to the oven without fear of smearing or transferring the decoration to the conveyor.

This is only one instance where the Armids have provided anti-offset protection. They are also used in printing inks, to provide anti-offset and anti-scratch properties; in wax paper formulations for anti-block action; as mutual solvents for waxes and plastics; as mold lubricants and extrusion agents; and in many other applications. Send the coupon now for further information on the Armids—see how their versatility, Armour's know-how, and your products can work profitably together.

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ARMOUR CHEMICAL DIVISION

ARMOUR AND COMPANY  
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## Looking Forward

### THREE NEW CHEMICALS

From time to time new chemicals are made available for which we have indicated uses. While they are first offered in sample or pilot plant quantities, often enough industrial uses have been quickly found to make these chemicals available commercially.

At this time three new chemicals are being offered for your testing. Stearone, Laurone and Palmitone are higher molecular weight ketones, unaffected by high temperatures, acids, alkalis and other strong reagents. In short, they are particularly inert and subject to only a few reactions, under rigorous conditions. They have a wide range of compatibility with many waxes, such as high-melting vegetable waxes and microcrystalline and paraffin waxes. They are also compatible with triglycerides and fatty acids such as stearic.

These properties suggest their use in such general fields as coatings, finishes and waxes. Particular applications for Stearone, Laurone and Palmitone might include their use as ingredients in wax and polish formulations, mold release agents, resin lubricants and anti-blocking agents, flattening agents for paints and varnishes, ingredients in water-proofing formulations, components in electrical insulations, protective coatings, cosmetic formulations, lubricants for vinyl calendering and extrusion, and anti-blocking agents for coatings and films.

If you are interested in applying these new chemicals to one of your own processes, send the coupon for samples—free, of course—and further information.

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1355 West 31st Street, Chicago 9, Illinois

Please send me:

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|--|---|
| <input type="checkbox"/> Neo-Fat 14 sample                         | <input type="checkbox"/> "Coconut Oil Fatty Acids"    |
| <input type="checkbox"/> Armid booklet                             | <input type="checkbox"/> Ketone samples & information |
| <input type="checkbox"/> Arquads 12 and 18—samples and information |   |

Name

Title

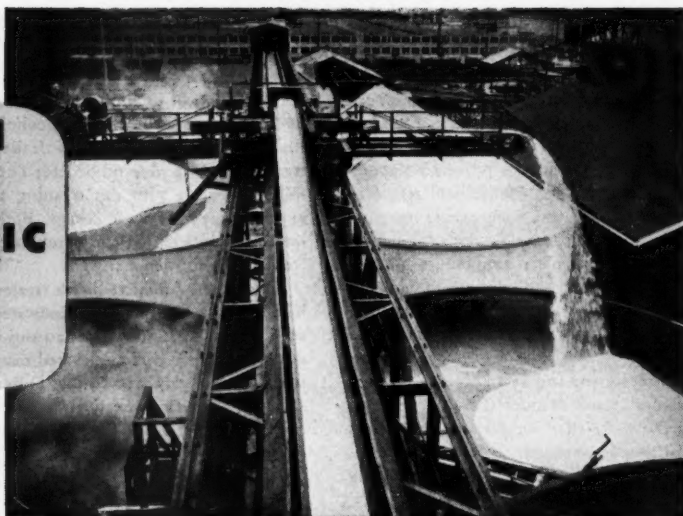
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**Umpty-thousand  
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HOOKER CAUSTIC**

*Coming up!*

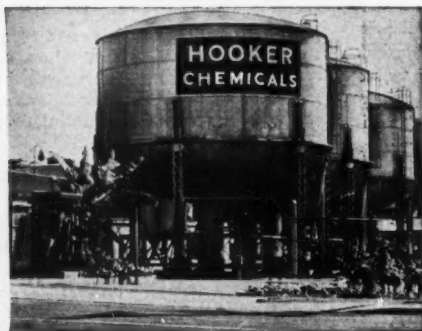


CONVEYORS feed salt to brine tanks for caustic soda and chlorine production in Hooker electrolytic cells.

We will produce more caustic soda this year than ever before in our history.

This would be meaningless, except that it expresses our belief in the future of the chemical industry—and our readiness to keep growing with it as one of your major suppliers of chemical raw materials and intermediates.

Today, more than ever, you can count on Hooker for dependable supplies of caustic soda, chlorine and many other industrial chemicals.



CAUSTIC SODA DISTRIBUTING STATION

## 5

### Reasons for Specifying HOOKER Caustic

- 1 Large-tonnage production**—The biggest in nearly 50 years—means dependability of supply for you.
- 2 Quality caustic in the form to meet your needs** 50% and 73% liquid; flake; solid. Drums, tank cars, barges. An impressive background of experience in serving large users of caustic.
- 3 Technical service**—Willing, competent help in safe handling and use of caustic in your process. Experience gained from serving 30 industries is at your disposal.
- 4 Fast, dependable deliveries**—More facilities than ever before for getting caustic to you, on schedule.
- 5 If you use caustic in 1/c1 quantities**, you can now purchase caustic from a Hooker plant, warehouse or jobber near you. Write us for name and address of your nearest Hooker jobber.

**FOR ANALYSES, PRICES, DELIVERY INFORMATION**, write Hooker Electrochemical Company, 3 Forty-seventh Street, Niagara Falls, N. Y.—or phone your nearest Hooker sales office.

*From the Salt of the Earth*

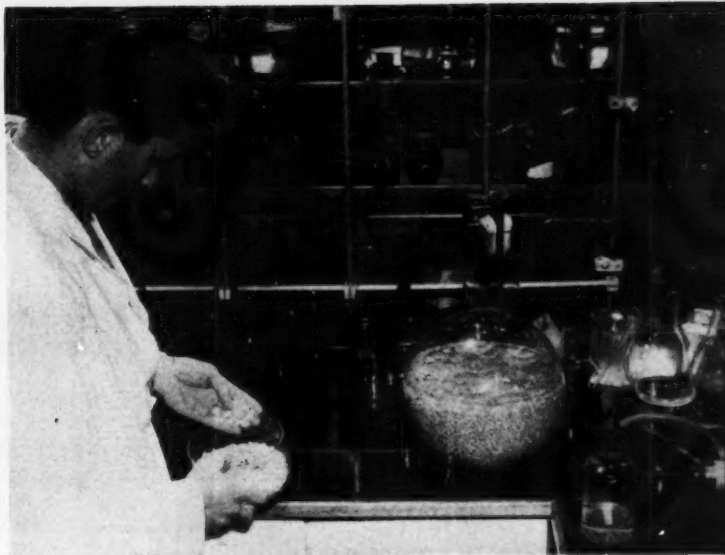
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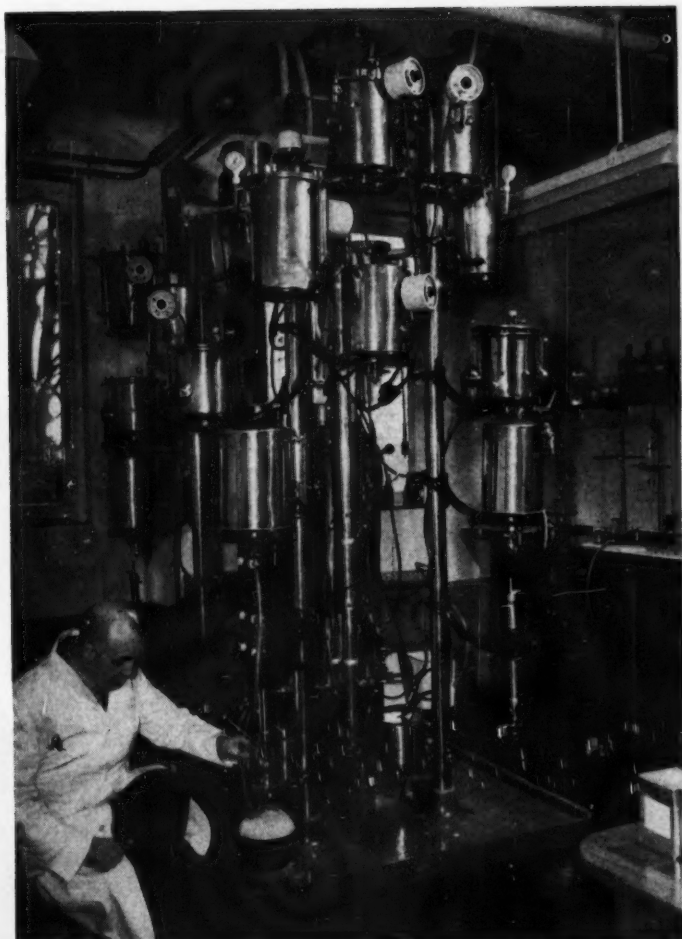


E-1934

## Controlling the Variables for a Better Brew



**BETTER RAW MATERIALS** are basic to a better finished product. Researcher checks experimental barley sprout taken from flask.



**STAINLESS STEEL** experimental unit permits close control of process variables, is used to brew sample grains and hops. Lab head draws specimen.

The average beer drinker may not know it, but for every gleaming goblet of advertising pulchritude, his bucket of suds is laced with a jigger of science. The brewing and fermentation researcher, today more than ever, has his work cut out in studies ranging from the determination of what makes for a good head on a glass of beer to the quest for new antibiotics and industrial fermentation products.

And, as might be expected, brewing research problems are international. This week, the CW Camera focused on the British Brewing Industry Research Foundation, took a close look at the workings of British industrial fermentation research.

Located in rural Nutfield, not far from London, the Foundation's research center is the first, and probably the only, brewing research organization serving an entire industry. Containing the national yeast culture collection, the Foundation's first interest is, of course, beer. Its laboratories are replete with two small-scale experimental breweries made exclusively of stainless steel and designed for close control of all known beer-making variables.

In these glittering miniature breweries, beer is brewed from special grains and hops under a multitude of process conditions. Physical properties, chemical composition and gas content of the product, in each case, are pinpointed and carefully recorded. Object: to spotlight the fundamental differences between beers, discover just

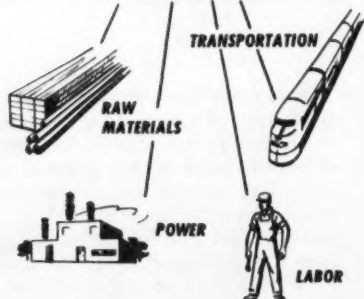


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**A PERFECT COMBINATION FOR  
PROFITABLE PLANT OPERATION**

Every industry needs a combination of conditions that will provide for its successful operation. Here at the SOO you will find just such conditions prevailing. A happy labor-management relationship, water and rail transportation, raw materials in abundance and low-cost power. You will discover, as other firms have, that the SOO is today's best bet for new plant construction or plant relocation. You can have all the facts if you

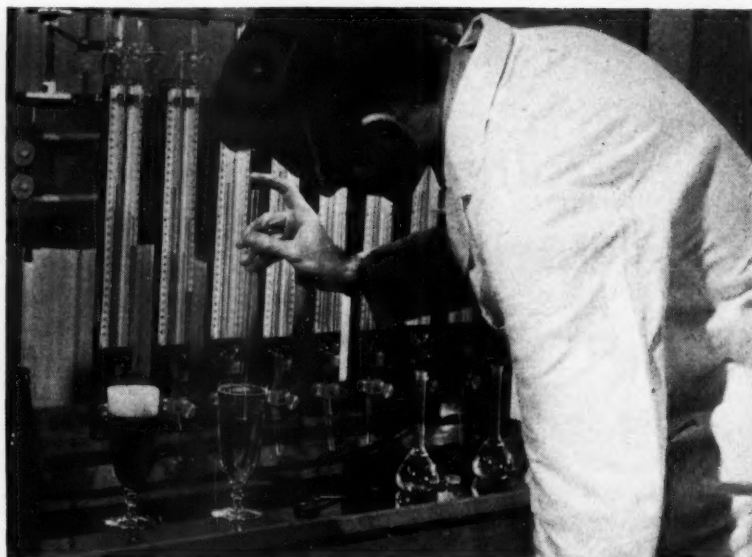
**WRITE FOR THIS BOOK TODAY**

All the important facts are in this book, "The World Famous SOO." It's yours free for the asking.



**SAULT STE. MARIE CITIZENS'**  
Industrial Commission

**SAULT STE. MARIE, MICHIGAN**



**CARBON DIOXIDE DETERMINATION** is just one of many tests made on specimen draught. This particular test may lead researchers to the secret of a full foaming head.

what is needed for a superior brew.

But science can take the brewer just so far. Proof rests with the palate. Obviously aware of this fact of nature, the Foundation leans heavily on its organoleptic test panel recruited from staff volunteers. The panel meets periodically, rates the experimental brews. Results will help correlate taste and chemical content, raising brewing to a reasonably exact science. Yet even the most science-oriented fermentation researcher admits the existence of that certain something, the intangible that is the art of the brewmaster.

Supplementing its conventional brewing studies, the Foundation currently is engaged in experiments aimed at a powdered, dehydrated beer and a beer concentrate for possible war-time use.

Apart from their continuing quest for a better beer, British brewing industry researchers are searching for new antibiotics, probing the biological processes of barley germination. From the latter study, opines the Foundation, may come new weedkillers, fumigants and germination-controlling chemicals.



**BUT PROOF OF A BETTER BEER** rests with the palate. Critical members of Foundation's taste panel cautiously sample researchers' latest offering.

# RESEARCH - PRODUCTION

Baker-developed Platinum Metals Catalysts provide by far the highest yield and catalytic activity at low temperatures and pressures—the purest end-product and most efficient production control. Industrial and pharmaceutical chemical manufacturers are also making the very profitable discovery that Platinum Metals catalysis is in many instances considerably more economical than catalysts of the base metals and oxides—in large as well as small-scale production. Certainly, the possibilities-for-advantage warrant investigation.

## ... FOR A GRAM OR A TON

**BAKER RESEARCH AND PRODUCTION SERVICE:** Here, the world's largest Platinum Metals Catalyst research and production facilities are maintained for a complete service to industrial and pharmaceutical chemical manufacturers.

If catalysis is a part of your production or if you are developing a product or process involving a catalytic stage, call a Baker research representative for consultation—in full confidence and without obligation.

Send for new file  
bulletin "SELECTIVE  
HYDROGENATION BY  
PLATINUM METAL  
CATALYSTS"



**BAKER**  
& COMPANY, INC.  
**CATALYSTS**



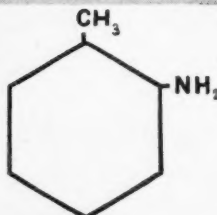
113 ASTOR STREET · NEWARK, N. J.

THE HUB OF PLATINUM METALS RESEARCH

## CHEMICALS AND INTERMEDIATES TO MEET YOUR REQUIREMENTS

### o-Toluidine Technical

M.W. 107.2



#### DESCRIPTIVE INFORMATION

This intermediate is a clear, light yellow oil which may darken on storage. It is completely soluble in 10% hydrochloric acid, soluble in ether and alcohol, and sparingly soluble in water. Traces of nitrotoluenes and isomers may be present as impurities. o-Toluidine Technical is available in commercial quantities.

#### SPECIFICATIONS

o-Toluidine Technical is produced to these specifications: Purity . . . 99.5% minimum

Distillation Range . . . It shall distill 5 to 95 cc between 1.0°C., including the temperature 200.2°C., corrected to 760 mm.

#### SUGGESTED USES

Opportunities for use of o-Toluidine Technical include application as an intermediate in the synthesis of rubber chemicals, dyes and pharmaceuticals. It may be interesting as an adsorbent for SO<sub>2</sub> and SO<sub>3</sub> waste gases.

### DO YOU NEED A SPECIFIC INTERMEDIATE?

**A WIDE VARIETY** of chemical intermediates is now available from the Du Pont Organic Chemicals Department. It will pay you to evaluate these products for your manufacturing processes.

**A NEW INTERMEDIATE?** We have the facilities to produce specific intermediates . . . perhaps one that will meet your exact requirements. Our technical men will be glad to study your problems and work with you in product development.

**A REQUEST** on your company letterhead will bring complete information. Just write to E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Chemicals Div., Wilmington 98, Del.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

**ORGANIC  
CHEMICALS DEPARTMENT**

## RESEARCH . . . . .

### Seeing Is Believing

Sparked by the independent research institutes and the business press (CW, Nov. 8, '52), American industry has come alive to the possibility of exporting research contracts to the scientific centers of Western Europe. On April 22, a party of 30 top-flight industrial research executives will leave New York City for a month's tour of research centers in Italy, Switzerland and France. Object of the expedition: sign-on-the-dotted-line business.

The tour is being organized by Stanford Research Institute (Stanford, Calif.) in response to a mounting tide of requests for first-hand information on the European scientific centers that the Institute's international division has surveyed and reported upon during the past two years. At the start, SRI Director Jesse Hobson pondered the advisability of a European trek, but the high caliber of interested individuals and their earnest interest in foreign research potential quickly settled the issue.

Itinerary planned by the Institute takes in Paris, Rome, Naples, Florence, Turin, Milan, Venice and Zurich. Italian leg of the tour has the blessing and active assistance of Italy's National Research Council, Ministry of Education and Productivity Committee. These agencies are even now arranging informal discussion meetings with the nation's scientific and industrial leaders.

Stanford Research Institute is not new to the European research scene. SRI organized OEEC Mission 84 (to investigate the state of Italian and Austrian scientific facilities), participated in related OEEC technical missions to France and West Germany in 1951. Before the Industrial Research Institute last Fall (in Quebec) and in his recent interview with *CHEMICAL WEEK*, SRI Director Hobson detailed the strong points of European research, pointed up the potential mutual benefits of American firms' doing research in Europe. His message obviously has not fallen on deaf ears.

**Pesticide Patents:** A new synergistic pesticidal combination is Germany's contribution to this week's research news. Farbenfabrik Bayer (Leverkusen) has been awarded a British patent (673,117) for a pesticidal mixture of dimethyl and diethyl-*p*-nitrophenyl thionophosphates. The activity of the combination is greater than the sum of the activities of the components.

**Add Ten:** Distillation Products Industries (division of Eastman Kodak Co.), Rochester, N.Y., has just made ten ad-



# FLEXSPOUT®



## Helps Sell *More* of any Product Sold in Steel Pails

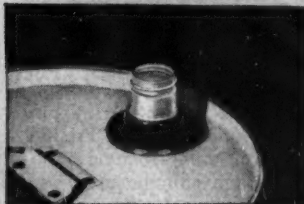
### BECAUSE CUSTOMERS PREFER THESE FLEXSPOUT FEATURES



**LEAKPROOF**—One-piece molded plastic, sealed directly on pail metal. Stronger than pail itself.



**EASY TO OPEN**—Without special tool. Nail, screwdriver or any sharp object does the job.



**FLEXIBLE POURING SPOUT**—Extends for easy pouring. No muss or fuss . . . because only inside of spout touches liquid.



**RE-SEALS TIGHTLY**—With plastic screw cap. Protects volatile liquids. Spout retracts for easy stacking.

**RIEKE METAL PRODUCTS CORPORATION**  
AUBURN, INDIANA

**FLEXSPOUT** simplifies using, pouring and storing your liquid products. It's a powerful sales tool for any liquid that's packaged in steel pails.

**FLEXSPOUT** is odorless, tasteless and non-toxic. It resists attack by almost all chemicals, solvents and oils. Easily applied with one stroke of a simple hand tool, it permits faster filling and sealing, lowers production costs. For a few cents a pail it adds dollars worth of sales appeal to your products.

Almost all pail manufacturers are equipped to furnish pails ready for use with the **FLEXSPOUT** closure. For more details, prices and a free sample, just fill out and mail the handy coupon.

—MAIL THIS COUPON TODAY—

**RIEKE METAL PRODUCTS CORPORATION**  
AUBURN, INDIANA

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**FLEXSPOUT Closure.**

Please send us... ☐ Free Sample  
☐ Brochure

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— the best means for a direct ester reduction

**LAH**

\*Lithium Aluminum Hydride (LAH)  
for ester reductions offers additional industrial advantages:

- LAH • reaction is reliable
- LAH • standard equipment, standard techniques are used
- LAH • reaction usually goes at room temperature
- LAH • generally high yields
- LAH • generally no side reactions
- LAH • reduction goes all the way to the primary alcohol

LAH is also known for its reductions in a broad range of functional groups to amines, azo compounds, thioethers and thiols, and its rapid, smooth reactions at normal room temperatures and atmospheric pressures.

For further data on LAH applicable to your use, please write

**STANDARD METAL HYDRIDES**

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## RESEARCH . . . . .

ditions to its family of fine organic chemicals. Among the newcomers: *tert*-butylhydroquinone;  $\beta$ -diethylaminopropionitrile;  $\beta$ -methoxypropionitrile; butanetetracarboxylic acid; and pulegone, an unsaturated cyclic ketone found in such essential oils as oil of pennyroyal and oil of peppermint.

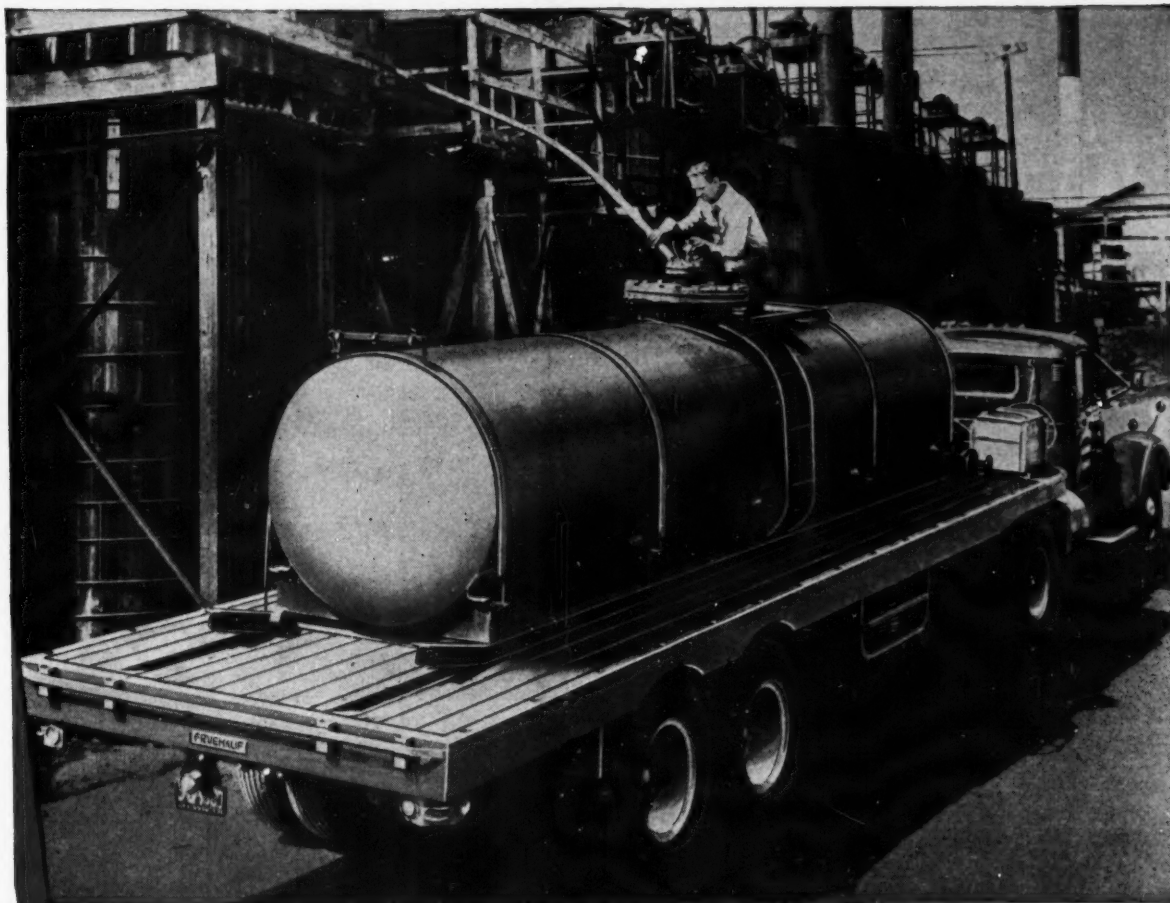
**X-ray School:** The General Electric X-ray diffraction school will be in session for five days starting May 4. To be held at GE's Milwaukee (Wis.) X-ray department plant, the course will cover theory and application of diffraction to chemistry, metallurgy, petroleum research, mineralogy, etc.

**Balmy Beginning:** In full view of press and television news cameras, R. J. Reynolds Tobacco Co. unveiled its sparkling new \$2-million research building on an unseasonably balmy (even for North Carolina) day last fortnight. Located at company headquarters in Winston-Salem, N.C., the new research center broadens the scope of Reynolds research, is set up for chemical, biological, microbiological and technological studies. Dedication speech, prepared by Corn Products Refining Co. President Ernest Reid, was delivered in his absence by Corn Products' Robert G. Ruark.

**Polymer News:** Fundamental research of potential significance to the rubber industry is reported by Carl Marvel and coworkers at Universities of Illinois and Akron. Marvel and his group prepared copolymers of vinylsulfonic acids with butadiene, isoprene and styrene, found the butadiene-vinylsulfonic acid butyl ester copolymer to have good low-temperature characteristics. Stress-strain properties of the *n*-butylvinylsulfonate copolymer approach those of standard GR-S. Oil resistance, on the other hand, is poor.

**A First:** What could be the first simultaneous nitration-sulfonation of an aromatic structure was accomplished recently by researchers of New South Wales University of Technology, Sydney, Australia. How it was done: New South Wales Chemists Bryson and Garnett treated a solution of  $\beta$ -naphthylamine at  $-25^\circ\text{C}$  with a mixture of nitric and sulfuric acids. Product is a mixture of two isomeric nitro-aminonaphthalene sulfonic acids—the main product being 1-nitro-2-aminonaphthalene-6-sulfonic acid.

Success of the odd simultaneous substitution apparently hinges squarely on the anomalous behavior of  $\beta$ -naphthylamine;  $\alpha$ -naphthylamine doesn't give the same result.



# *Jacks of all Trades and Masters of all ...*

**FRUEHAUF**  
*Trailers*

"ENGINEERED TRANSPORTATION"

THIS FRUEHAUF PLATFORM TRAILER doubles in brass for Southern Dyestuff Corporation of Charlotte, N. C. Bulk SODYECO bulk orders are hauled in the removable tank shown above. But more often, the platform works with five Fruehauf Stainless Steel Vans hauling drums of dye. Here's what SODYECO'S W. C. Martin has to say about the way Fruehauf Trailers stand up to this tough job—

"Two years used to be maximum Trailer life with us. But our Fruehaufs have been with us going on three years with no signs of wear.

We've found them ideal for an operation like ours in which Trailers must be continually exposed to corrosive plant fumes. And talk about cost of upkeep . . . with Fruehauf it's practically nil!"

Put Fruehauf versatility and Fruehauf stamina to work for you. Your Fruehauf representative has full details.

World's Largest Builder of Truck-Trailers

**FRUEHAUF TRAILER COMPANY**

DETROIT 32, MICHIGAN



## When Selecting A Plant Site . . . .

### Look For These Advantages

- ✓ Adequate power supply
- ✓ Adequate water supply
- ✓ Low utility costs
- ✓ Expansion space and flexibility
- ✓ Non-strategic areas
- ✓ Moderate wage scale and fringe benefits
- ✓ Ample labor supply
- ✓ Peaceful labor history
- ✓ Highly productive labor
- ✓ Proximity to markets and/or raw materials
- ✓ Low freight rates
- ✓ Good transportation facilities
- ✓ Cooperative community
- ✓ Adequate housing
- ✓ Satisfactory educational, medical and recreational services
- ✓ Communities well balanced between industry, commerce and services
- ✓ Full fire and police protection
- ✓ Favorable climate
- ✓ Sound soil foundation
- ✓ Disposal outlets

### Avoid These Mistakes

- X Superficial appearances
- X Biased information
- X Publicizing your interest
- X Sites less than five times the size of the proposed plant
- X Intermediate locations between material sources and markets
- X Unfavorable competitive position for markets
- X Distances over 20 miles from labor market
- X Fluctuating labor source
- X Restless or corrupt labor unions
- X Unfavorable labor laws
- X High workmen's compensation and disability benefits
- X Cities with a high cost of living
- X Corrupt and poorly run cities
- X Restrictive industrial regulation
- X Poor civic cooperation and services
- X Neglecting influences of neighboring industries
- X Proximity to residential districts
- X Fluctuating power supplies

**P**icking a plant site is as knotty a problem as the chemical production executive must face. For each plant has a different set of variables to be weighted, and there's no simple formula that can be applied to give the one best answer. But there are common problems as well as common pitfalls. And to find some of them CW last week interviewed Leonard C. Yaseen,\* senior partner of Fantus Factory Locating Service (New York City) and a prominent expert on the subject.

Yaseen points out that the U.S. is connected by 226,000 miles of railroads, 300,000 miles of regular truck freight lines. It's made up of 48 states that have different laws on labor, pollution and taxes; 4,250 communities that have populations of 2,500 or more.

\* Author of the recently published "Plant Location," Business Reports, Inc. (Roslyn, N.Y.), one of the most authoritative books ever published on the subject.

Putting the plant in or near the right community is what he describes as "one gigantic process of elimination." And picking the wrong site can hike your total manufacturing and distribution costs by as much as 10%.

**Materials or Markets:** Do you build close to the market or close to the material source, buy power or generate your own? Answers to these questions do not lend themselves to generalizations, call for a detailed analysis of each case. But they are part of the process of elimination.

Another big step in pinpointing the community or specific area is measuring the labor markets in each. Much of this work, says Yaseen, can be done "at home," through a preliminary investigation. But there are general ground rules to be followed:

- Be careful when measuring the labor potential of vacation resorts.
- Remember that the number of

people in a community is important in relation to the number of *employed* people in the community.

- When evaluating a rural area, take into consideration the available work force in the whole county.

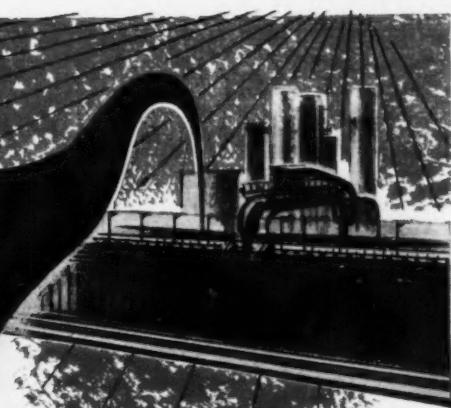
- There should be a balance among the working force engaged in commerce, service and manufacturing. A community where the number of people employed in manufacturing exceeds 50% of the aggregate number in services and commerce should be viewed with caution.

- Recruiting a large portion of the workers from beyond a 20-mile radius can be dangerous.

- Subtract all persons listed as eligible workers who are confined in hospitals or institutions. They can amount to a sizable fraction of the market.

- Do not consider the commuting

AT YOUR END OF THE  
COAL CHEMICAL PIPELINE . . .



## NEW *Magic Bullets* for Murdering Microbes

Coal chemicals are the steadfast allies of the medical scientist in his uphill conquest of disease. Pyridine, for example, is vital in the manufacture of sulfa drugs. And gamma-picoline, another valuable Pittsburgh coal chemical, is the source of isonicotinic acid hydrazide, the drug which has shown bright promise in the experimental treatment of tuberculosis in recent months.

Because we control every step in the production of these coal chemicals—from coal to finished chemicals—we're able to provide the medical and pharmaceutical fields with products of exceptional high quality and purity. This same *assurance of quality* extends through the closely integrated production of our entire Neville Island plant.

Whether you need coal chemicals, agricultural chemicals, dyestuffs, or the products of any of our other divisions, you'll find Pittsburgh Coke & Chemical a reliable source . . . because we're *basic*.

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Naphthalene Phenol Phthalic Anhydride  
alpha-Picoline beta, gamma-Picoline  
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Pyridine Sodium Cyanide  
Toluene Xylene Xylenol



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February 21, 1953 • Chemical Week

## BETTER HEAT SEALING OF WAXED PAPER

*Wax additive lends itself to better heat sealing and has anti-blocking qualities to avoid sticking . . .*

In heat sealing waxed paper it is most desirable that the coating seal readily, yet have anti-blocking qualities to avoid sticking tendencies of the waxed paper during its manufacturing process.

To gain this result, 240 Wax is used as a mutual solvent for polyamide resin and paraffin wax. This blend serves to plasticize the finished coating.

To assure a coating impervious to air and thus eliminate "breathing" tendencies of the waxed paper, a blend of 78% polyamide resin, 12% paraffin wax, and 10% 240 Wax has proved to be very effective. As an example—this coating prevents staling of bread. Variations in temperature usually encountered in transporting and displaying bread cause no spoilage losses, because of this excellent protection.

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#### • ELECTRICAL DIPPING WAXES

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240 Wax has total repellency to water and salt water.

#### • RUST PREVENTATIVES

The same repellency is realized when 240 Wax is added to petroleum sulfonate rust preventative compound.

#### • CHEMICAL PROTECTION

• 240 Wax is also resistant to practically all solvents, acids, and alkalis.

Write for further details.



**CARLISLE  
CHEMICAL  
WORKS, INC.**

READING 15, OHIO

## PRODUCTION . . . . .

population as potential recruits for an industrial work force.

• If you're counting women as part of the labor market, evaluate the average family income for the area; it's generally the need for supplementary income that draws women into the labor market. Also, you can get a good idea of the availability of female help by investigating the availability of domestic help.

• Areas that attract migratory labor (e.g., big ports) are not good bets for certain manufacturing operations.

**Down to Cases:** After the preliminary investigation, the next step, says Yaseen, is the actual field investigation. The 1,771 local offices of the State Employment Service are good sources of information. Yaseen cautions, however, that wherever possible, the investigator should personally examine the applicants' files. Probably the best source of information, he says, is a manufacturer already operating in the area.

The going wage rate is another important consideration for the manufacturer. And Yaseen is quick to point out that some communities have a faster "buying tempo" than others. "In those places," he says, "it takes character to be thrifty." Thus, for a contented work force, you may have to pay more than the cost-of-living index in the area would indicate. Many Chambers of Commerce and other civic agencies, for instance, advertise a high retail expenditure per capita as an inducement to some types of business. These figures may have the opposite effect on a manufacturer seeking a labor force.

The general labor climate of an area is another aspect of the problem



**PLANT-LOCATOR YASEEN:** In places where the . . .

that can't be overlooked. Here again the best source is likely to be a manufacturer already in the area. But the past history of the community on labor problems is important, too. That can be obtained by reading the local newspaper and consulting its files, from publications of the Bureau of Labor Statistics and by talking to local labor leaders.

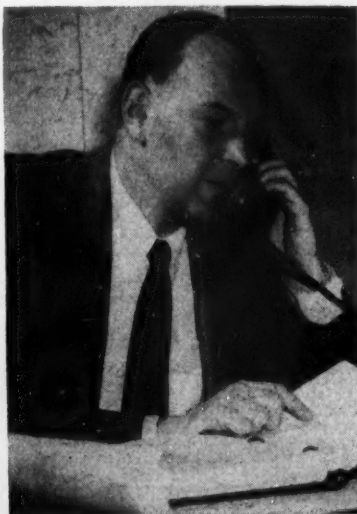
"Strikes and slow-downs," says Yaseen, "are forms of articulate unrest. There's also inarticulate unrest that manifests itself in excess absenteeism, tardiness and turnover." You can normally expect an absentee rate of 3%. When employers in the area report rates double or triple that, you had best tread cautiously.

## EQUIPMENT . . . . .

**Filter Affiliation:** Micro Metallic Corp., Aircraft Porous Media, Inc., and Porous Plastic Filter Co. have just united under the direction of David B. Pall. To be known as the Pall Filtration Companies (Glen Cove, N.Y.), the affiliation will have a research department rounding out its operations.

**Couldn't Wait:** The new Products Development Division (F. E. Myers & Bros. Co., Ashland, Ohio) couldn't wait for the division's completion before going about its job. Result: two new Ejecto water systems, one new field crop concentrate sprayer and one new concentrate attachment for dilute sprayers.

**For Seeing:** Just standardized by the U.S. Maritime Administration, American Optical (Southbridge, Mass.) Panoram 600 and 800 safety goggles



. . . tempo is faster, it takes more character to be thrifty.



*Useful for: Paints - Adhesives - Cements -  
Anti-Rust Compounds - Floor Tile - Textiles  
Waterproofings - and many other products*

# PICCOUMARON

*Para-Coumarone-Indene Resins*

Available in ten melting points from a liquid to tough, brittle solids. Brief descriptions of principal properties are given below. Complete data and samples will be gladly sent upon request.

## SOLUBILITY

All grades are soluble in coal tar creosote, turpentine, terpene solvents, most ketones, most chlorinated solvents and derivatives, and esters. Most grades are soluble in drying and semi-drying oils.

## COLORS

Colors vary from light (Coal Tar Resin Color Scale numbers 1½ to 3½) through medium, reddish, dark to extra dark (numbers 12-16).

## GRADES

Standard grades include ten melting points and six colors. Special grades are made for users where requirements are large enough to make special runs economical.

## WEIGHTS

PICCOUMARON Resins vary in weight according to the melting point, averaging 8.5 to 9.5 pounds per gallon.

## CHEMICAL PROPERTIES

Have good acid resistance, being inert to all except concentrated oxidizing acids; good alkali resistance; do not react with most pigments. Composition is essentially para-coumarone-indene polymer.

## PLASTICIZERS

Suitable plasticizers include: most of the chemical or ester types; most of the aromatic hydrocarbon types; most heat-treated oils; carbonized pitches; soft petroleum resins.

## COMPATIBILITIES

The compatibility of various grades of PICCOUMARON RESINS has been determined for waxes, resins, petroleum and coal tar residues, pitches, pine tar, paint and varnish oils, rubber and rubber-like materials, chlorinated and other materials.

## PENNSYLVANIA INDUSTRIAL CHEMICAL CORP.

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Plant at Clanton, Pa. and West Elizabeth, Pa. and Chester, Pa.  
Marketed by Pennsylvania Salt Chemical Co., Pittsburgh 22, Pa.  
and Harold Standard Chemical Co., Akron 3, Ohio.

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*...look for this  
symbol of service*



*These stock points are your  
assurance of quality materials...*

*...when you want them...where you want them*

**'ALPHANOL' 79\***

**NONANOL\***

Sodium Bicarbonate

Ammonium Chloride

Trichlorethylene

Sodium Cyanide

Potassium Cyanide

Copper Cyanide

Sodium Aluminate

Urea

*\*Technical bulletin available on request.*

*This is only a partial listing of the items we offer.*

*Write for complete product listing.*



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369 PINE STREET, SAN FRANCISCO 4, CALIFORNIA

*Supplying ICI heavy chemicals to American industry.*

## PRODUCTION . . . . .

can be worn in conjunction with respirators without visual interference.

**For Sawing:** Two new versions of Tri-Clover Machine Co.'s (Kenosha, Wis.) Super Speed power cut-off saw are now available for metal cutting. Using abrasive cutting wheels, one model cuts from ½ in. through 6 in.; the other, from ½ in. through 12 in.

**Doubled Boilers:** With its second Wilmington, N.C., plant planned for mid-year completion, Babcock & Wilcox Co. figures to more than double boiler division production capacity a year ago. This makes a seven-plant total for this division.

**Corrosion Confirmation:** From the National Bureau of Standards comes word of the completion of its corrosion study. Results confirm earlier NBS work, show that galvanized steel having three ounces of zinc per square foot of exposed surface is more corrosion-resistant than bare steel in many soils.

**Canadian Capers:** New expansion by the Foxboro Co., Ltd. (Montreal) has doubled its Canadian facilities, reflects growing Canadian demand for indicating, recording and controlling instruments.

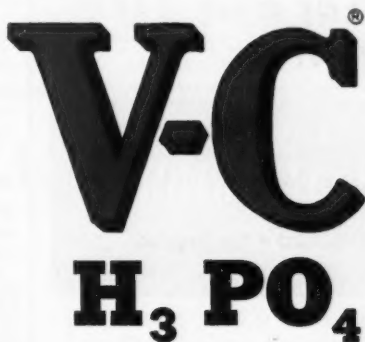
**Mass Meter:** "The most vital industrial and military needs will be met first." That is the word from Control Engineering Corp. (Norwood 105, Mass.) on its new mass flowmeter which is claimed to be capable of measuring the true mass rate flow of anything that will flow or fall through a pipe while remaining totally insensitive to volume.

**Time Savers:** A new quick-screen-change hammer mill is being made by the Schutte Pulverizer Co. (Buffalo). Fast screen changeover without operation interruption will be the big sales point.

• Just introduced by the Ogden Filter Co. (Los Angeles), a tank-type pressure filter for the drug and cosmetic industries saves time by substituting diatomaceous silica for screens, cloths, papers and other filter media, which, it is claimed, will permit a faster rate of flow without lowering quality control.

• **Flexible Furnace:** Featuring variable operating speed and temperature, a new automatic kiln has been designed and installed by Michigan Chemical Corp. (St. Louis, Mich.) to meet demands for uniform granule size and

When purity counts  
remember



**Famous for purity,** V-C Phosphoric Acids are extraordinarily low in impurities. You are thus assured of less side reactions, less contamination and greater uniformity of your end product.

**85% N. F. Grade** V-C Phosphoric Acid is one of the purest phosphoric acids produced in the world today. It surpasses National Formulary and American Chemical Society specifications and meets all U. S. Food and Drug Administration regulations. This odorless, water-white, sparkling-clear, syrupy liquid is ideally suited for use where high concentration and maximum purity are desired.

**75% Food Grade** V-C Phosphoric Acid meets or surpasses all regulations and requirements for phosphoric acid of this grade. It is used where economy is the deciding factor, rather than high concentration.

**V-C Phosphoric Acids** are shipped in glass carboys, stainless steel drums, latex-lined barrels, rubber-lined tank trucks and tank cars. Forty-eight hour truck delivery in the Middle Atlantic and Southeastern states. The services of V-C technical experts are available to you without charge. Write or wire for full details.

#### Important uses for

#### V-C PHOSPHORIC ACIDS

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- ...pickling iron and steel
- ...flame proofing textiles and wood
- ...metal treatment and rust prevention
- ...aluminum finishing
- ...producing antibiotics

V-C Phosphoric Acids are also widely used in the manufacture of chemicals, dental cements, drugs and pharmaceuticals, foods and soft drinks, plastics, soaps and cleansers, waxes and polishes, plant foods, sugar, countless other products, and in water treatment. When purity counts, remember V-C!

Elemental Phosphorus  
Phosphoric Acids  
Trisodium Phosphate  
Disodium Phosphate-Anhydrous  
Tetrasodium Pyrophosphate  
Sodium Tripolyphosphate



Ferrophosphorus  
Sodium Metasilicate  
Tetraethyl Pyrophosphate  
Alkyl Phosphites  
Other Organic Compounds  
of Phosphorus

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97,147 Shares

**HOOKEE ELECTROCHEMICAL COMPANY**

Cumulative Second Preferred Stock, Series B  
(Without Par Value—\$4.20 Dividend)

Convertible Into Common Stock Prior to January 1, 1963

*Rights, evidenced by Subscription Warrants, to subscribe for these shares have been issued by the Company to holders of its Common Stock, which rights will expire at 3:30 P.M., Eastern Standard Time, February 18, 1953, as more fully set forth in the Prospectus.*

Subscription Price to Warrant Holders  
\$100 per share

*During and after the subscription period, the several Underwriters may offer shares of Cumulative Second Preferred Stock, Series B, all as more fully set forth in the Prospectus.*

*Copies of the Prospectus may be obtained from the undersigned only in those States in which the undersigned may legally offer these securities in compliance with the securities laws of the respective States.*

Smith, Barney & Co.

R. W. Pressprich & Co.

February 4, 1953

## PRODUCTION . . . . .

chemical reactivity in the production of calcined magnesite.

**On The Wagon:** Philadelphia's F. J. Stokes Machine Co. recently installed on a portable pump wagon equipment with a two-fold purpose: for the emergency vacuum processing of products and for the testing of vacuum-tightness in other equipment. Available in two models, one for handling 2,000 cfm. and the other handling 4,000 cfm. between one and 10 microns absolute pressure, the wagon unit contains a Microvac pump, a diffusion pump, a high-vacuum valve and an hermetically sealed refrigeration unit, plus auxiliary piping, valves and electrical controls.

**Made To Last:** Detecto Scales, Inc. (Brooklyn) is offering a corrosion- and rust-resistant scale for use where corrosion poses a problem. Graduated in ounces, scale has a 3-lb. capacity.

**Primed For Pumps:** New turbine-type pumps have just joined the centrifugal-type presently produced by the Aurora Pump Co. (Aurora, Ill.). Available with self-priming features if desired, the turbine pumps have mechanical seals, 3 to 30 gpm. capacity and heads from 0 to 250 ft.

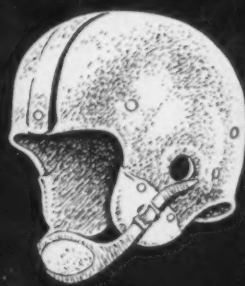
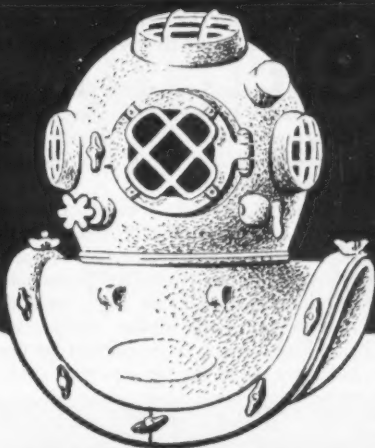
**Complement For Density:** To supplement its 3-meter spectrograph and source power panel, Baird Associates, Inc. (Cambridge, Mass.), has brought forth its newest aid in emission spectroscopy, the comparator densitometer. It is a double-beam, automatic, servo-type instrument which is calibrated to read photographic densities directly on a linear scale.

**Bridge For Conveyors:** To get over conveyor systems you can't walk around, the Ballymore Co. (Wayne, Pa.) recently introduced its folding bridge. Available in varying heights, the bridge consists of two Ballymore safety step ladders joined by a connecting walkway.

**Pipe Hanger:** Designed for support of high-temperature process and steam piping, the new Model R hangers feature single-bolt adjustment for 10% increase or decrease in their loads, are made by Grinnell Co., Inc. (Providence, R.I.).

**Sanitation Study:** Now entering its second year is the Society of Plastics Industry project to evaluate the non-toxicity of plastic pipe in the underground transmission of water. Conducted by the National Sanitation Foundation (Ann Arbor, Mich.), the study will continue for another year.

DOUBLE CHECKED ✓ FROM RESEARCH TO INDUSTRY



ALL HELMETS...

**BUT** designed for different uses!



ALL

**NON-IONICS**

**BUT** designed for different applications!

The Sharples Nonic line consists of unique non-ionic surface-active agents, each designed to do a definite job for you. The hydrophilic-hydrophobic balance of each Nonic is adjusted to provide optimum properties for your application.

**NONIC 218** powerful detergent and wetting agent  
... maximum solubility in water and  
in salt solutions.

**NONIC 234** powerful detergent with superior  
wetting properties.

**NONIC 259** clouding agent.

**NONIC 261** emulsifier for mineral, fish and  
vegetable oils.

*Write Sharples for samples and technical information.*



**SHARPLES CHEMICALS, INC.**

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Meriden, Hoyt & Miller Inc., San Francisco • Los Angeles • Seattle • Portland

Shawinigan Chemicals, Ltd., Montreal • Toronto

Alcoa Company International, New York



BOVINE BOOST: Last shot before the slaughterhouse.

## Bonanza in the Barnyard

A freshet of new products is swelling the stream of veterinary medicines—booming branch of pharmaceuticals.

Animal health goods sales are currently over \$140 million. Feed supplements are climbing fastest.

As a major outlet for new medicinals, animal products have drawn in firms new to barnyard pharmaceuticals.

Almost faster than they can be reported, new veterinary medicines and new animal health techniques are being introduced to the farmer and the public.

- Armour has a new form of ACTH for ketosis, a metabolic disease of cattle;

- Cutter Labs has a new hog cholera vaccine;

- Pfizer is introducing an intramuscular veterinary form of terramycin;

- At least one firm is working on an additive for poultry water to cut diseases of chicks.

These are only a few of the recent developments indicating the growing awareness on the part of pharmaceutical firms of the vast potential in veterinary medicines.

As in the case of human medicines, the development of antibiotics—followed by their incorporation in feeds—has been the most striking aspect

of veterinary medicine. Antibiotics are now highly competitive products, expensive to put into production. Vet medicines present a welcome, profitable outlet for them.

**Therapeutant Trade:** Whereas the feed supplements have been responsible for some of the biggest news stories (CW, April 7, '51), animal health goods is a large business in itself. In 1951, when antibiotic feeds were just getting established, total animal health goods sales were just about \$136 million (about 3% of this was for instruments). This figure, based on an annual survey made by the *American Druggist*, shows a 6.7% climb in sales. Thus, even before feed supplements, the market was more than \$125 million, and has been more than \$100 million since World War II.

**Saved for the Market:** Why the farmer is willing to lay out well above \$100 million is apparent when losses to infection and disease are consid-

ered. USDA's conservative estimate: \$2 billion loss in animals per year; one in 10 animals never lives to maturity.\*

Non-farmers apparently forget that animals are susceptible to disease, but these estimates show clearly that simple, outdoor living just doesn't guarantee health.

Poultry doesn't escape disease, either. An estimated \$10 million worth of chickens is lost yearly due to parasite-caused coccidiosis. The household pet loss is remarkably high, too, although from the dollar standpoint, such losses aren't as important to the economy, or to the vet medicine maker.

The diseases that afflict animals in many cases resemble human ailments. Thus treatments that have found favor in human medication can be applied to animals—provided the cost isn't too great. Some livestock diseases, of course, have no human counterpart.

**Disease Roster:** A partial listing of the major afflictions of livestock and poultry will help underline the requirements for veterinary medicines, point up the need for continued research:

- In the news the past few months has been vesicular exanthema, a virus disease of hogs described as a severe form of fever blisters. It's seldom fatal, but causes expensive weight losses. At present, medicines can't control it—only slaughter of the exposed and infected animals (some 200,000 of them) halted its spread.

- The ailment probably best known to the layman is foot-and-mouth disease. Also a blister-like malady, it affects cattle, hogs, goats and sheep; mortality is often 50% or more. It has shown itself to be one of the fastest spreading of animal plagues, and no cure is known. Europe has suffered a severe outbreak of this panzootic (affecting a number of species of animals) that has cost at least \$½ billion; Argentina loses an estimated 10-20% of its animal products output to it.

There appear to be six types of the virus disease; Europeans have worked out a vaccine of fair value for one type alone. In keeping the disease from the U.S., (only U.S., New Zealand, and Australia have escaped it) we've had to help stamp it out in Mexico. The cost has been terrific—close to \$100 million lost in slaughter-

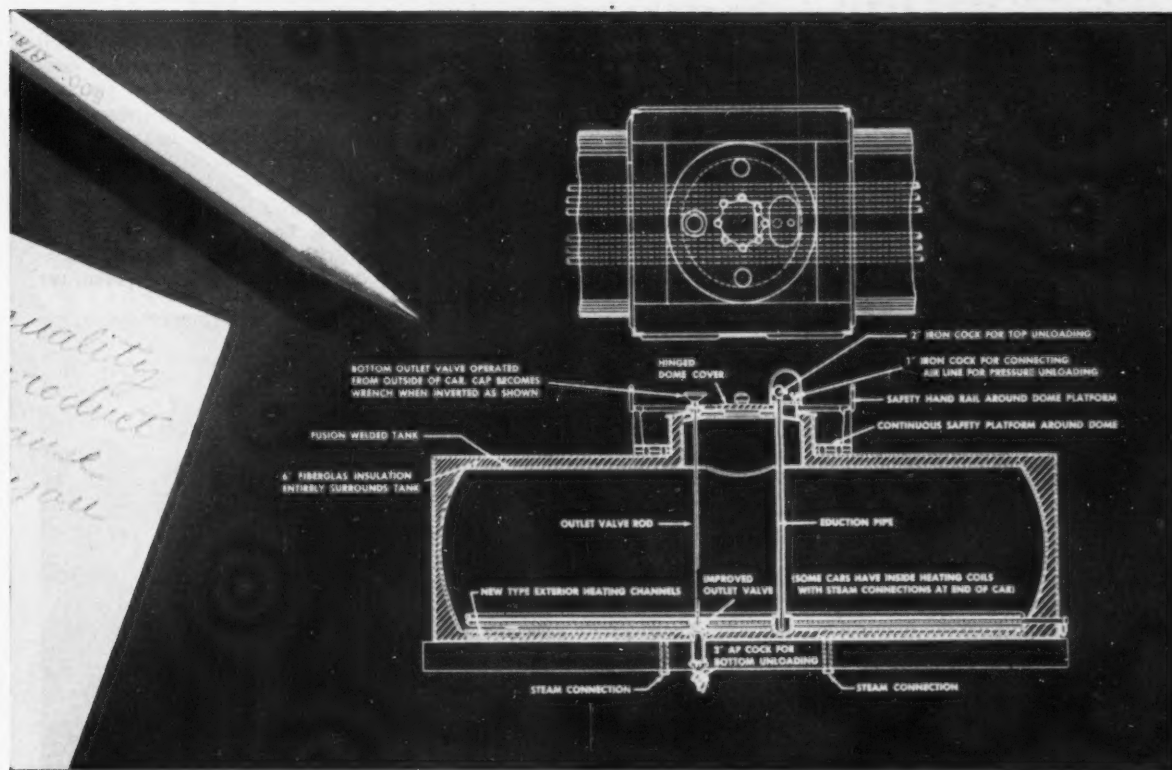
\* The USDA's system for estimates—totaling individual country agent estimates—is not too highly regarded in some circles. Many in the industry feel the totals so reached are far lower than actuality.





# MODERN TANK CARS MAINTAIN HIGH QUALITY OF DOW CAUSTIC SODA FROM PLANT TO YOU

Special design permits safe, fast shipment  
and convenient unloading



All of Dow's caustic soda shipping points throughout the country maintain a large fleet of modern tank cars.

Each of these Dow owned cars is insulated, protectively lined and fitted with nickel heating coils. They are equipped to permit unloading from the top or bottom by air pressure or pump. There are frangible discs or safety valves to prevent possible injury to workers from excessive air pressure and they have protective plug cocks on the bottom outlet leg.

When you order caustic soda solution from Dow, regardless of whether shipment is made from Dow's three large plants at Midland, Michigan, Freeport, Texas and Pittsburg, California or

from terminals at Carteret, New Jersey; Charleston, South Carolina or Los Angeles, California, you can be certain of dependable delivery of high quality caustic. All tank cars are expertly maintained and thoroughly washed and inspected before every loading. Caustic soda 48-50% solution and 71-73% solution are delivered in 8,000 and 10,000 gallon tank cars.

The next time you buy caustic soda, whether it is solution, solid, flake or ground flake, buy from Dow. Write for Dow's CAUSTIC SODA HANDBOOK for complete unloading, handling and product information. Wherever you are, you're close to Dow caustic soda. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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**A NEWCOMER you'll  
want to investigate**

**An All-Vegetable  
Oleic Acid With  
Exceptional Stability**

Send for your sample of CEN-OLEIC #1040 to make your own evaluation tests.

This new all-vegetable Oleic Acid has a color comparable to White Oleic, with superior color stability. The poly-unsaturate content is very low and results of the Mackey tests show over 6 hours to reach 105° C.

Study these specifications with relation to your special Oleic Acid compounding needs:

Iodine Value	84-92
Acid Value	191-195
Saponification Value	192-196
Titre: °C	15-20
Color (Lovibond 5 1/4")	15Y/3R max.

#### Other Century Oleic Acids

Century 1030	
White Oleic (U.S.P.)	Titre 3- 5°C
Century 1020	
White Oleic (U.S.P.)	Titre 8-10°C
Century 1005	
Distilled Oleic	Titre 3- 5°C
Century 1010	
Distilled Oleic	Titre 8-10°C



**W. C. HARDESTY CO., INC.**

Century Stearic Acid Products, Inc.  
41 East 42nd St., New York 17, N.Y.  
Plant: Dover, Ohio

In Canada:  
W. C. Hardesty Co. of Canada Ltd., Toronto

## SPECIALTIES . . . . .

ed stock. More than 60 million doses of the vaccine were used. But since last September, the ban on Mexican cattle has been lifted.

Not all the diseases have sidestepped cure.

- Shipping fever is one to succumb. Though virtually unknown to the layman, this respiratory infection often lays low a disturbing percentage of animals arriving at stockyards. Recent indications are that Pfizer's terramycin will cure it (*see cut*), so that a full-weight animal is ready for the packer.

- Mastitis is deemed one of the most costly livestock diseases.\* This streptococcus infection of the udder affects roughly a third of our 24 million dairy cows, cuts sharply into milk production. Acute mastitis gives in quickly to neomycin and dihydrostreptomycin - penicillin combinations.†

\* The American Society of Veterinary Medicine says Wisconsin alone loses \$40 million, the country \$150. Other estimates run to \$200 million.

† Swiss cheese makers are disturbed by use of antibiotics in mastitis treatments; say the drugs knock out cheese-forming bacteria. Neomycin is plugged as offering less interference to these cheese-producing organisms.

Chronic mastitis, where infection is protected by scar tissue, is a more difficult problem.

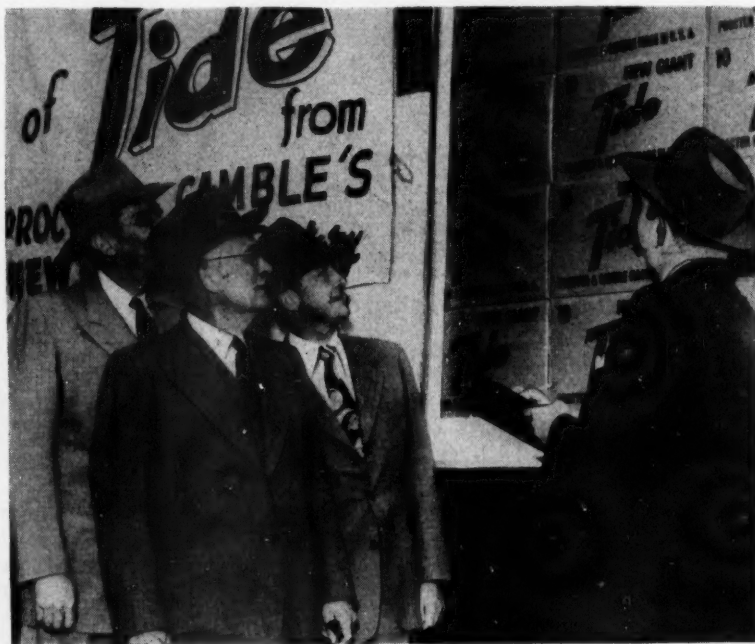
- White scours of calves, a severe and usually fatal diarrhea disease, previously controlled by rigorous sanitary procedures, has been found susceptible to terramycin. Anthrax, a blood infection, and anaplasmosis, another blood ailment, can be knocked out by the broad-spectrum antibiotics.

Vaccines are able to control other maladies, such as rinderpest, rabies, bovine tuberculosis, brucellosis, and hog cholera.

**Poultry Problems:** Chickens and turkeys face disease hazards, too. Antibiotics are showing great promise in the treatment of the latest serious poultry ailment—air sac disease—which reached alarming proportions in eastern broiler raising areas last year.

Coccidiosis (bloody diarrhea) has been cut in severity by sulfas and antibiotics. It looks as if blue comb, or mud fever, too, will be subdued by the antibiotics.

**Sulfas, Too:** Although the antibiotics, with their plus of growth stimulation, have made the most recent vet



## Tide's Out on the Pacific Coast

TIDE ROLLED OUT of the new Sacramento (Calif.) plant of Procter & Gamble last week for the first time. Shown commemorating the first shipment of detergent from the \$2½-million plant are civic and company leaders: W. L. Greer, president of the Sac-

ramento Chamber of Commerce; Noa S. Gayle, a chamber director; George A. Conwell, San Francisco district manager for P & G; and P. S. Willard, superintendent of the factory (*left to right*). The plant started actual operation Jan. 6.

**Sodium Tripolyphosphate**

**Tetrasodium Pyrophosphate**

ANHYDROUS

**Sodium Polyphos**

(SODIUM HEXAMETAPHOSPHATE)  
(SODIUM TETRAPHOSPHATE)

**Trisodium Phosphate**

CRYSTALLINE  
MONOHYDRATE

**Sodium Phosphates**

**BLOCKSON**

**Chlorinated  
Trisodium Phosphate**

**Disodium Phosphate**

ANHYDROUS  
CRYSTALLINE

**Monosodium Phosphate**

ANHYDROUS  
MONOHYDRATE

**Sodium Acid Pyrophosphate**

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SODIUM FLUORIDE

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HYGRADE FERTILIZER

BLOCKSON CHEMICAL COMPANY • JOLIET, ILLINOIS



*Why should anyone  
want a lot of...*

**Diethyldithiocarbamic Acid Sodium Salt?**

We haven't the slightest idea, but we're ready to supply it and other "rare" organics in larger-than-laboratory amounts. If such a service is of interest to you, just write to *Distillation Products Industries*, Eastman Organic Chemicals Department, Rochester 3, N. Y. (Division of Eastman Kodak Company). There are more than 3500 regularly supplied Eastman Organic Chemicals for science and industry.

*Also...vitamins A and E  
...distilled monoglycerides*



**SPECIALTIES . . . . .**

medicine news, the sulfa drugs are still major factors and have been since their introduction about 17 years ago. They're standbys for numerous unspectacular ailments, and are frequently used now in combination with other drugs.

Growth stimulators have taken on increasing importance to the farmer. Vitamin B<sub>12</sub>, the antibiotics, 3-nitro-4-hydroxyphenylarsonic acid have demonstrated an unusual ability to speed growth of livestock and poultry. Animals mature faster, and actually consume less food. Surface-active agents, too, have demonstrated this startling growth-spurring quality (CW, March 29, '52).

Big strides have been made in the use of synthetic and natural sex hormones. The veterinary profession is now able to save, by use of hormone therapy, breeding animals that otherwise would have been lost because of sterility, and recent word on Upjohn's ECP (estradiol cyclopentyl propionate) is that it can double the lambing frequency of ewes.

**Everybody In:** For a number of years, the major suppliers of veterinary products, including the instruments, anesthetic agents, hemorrhage reducing compounds, narcotics, drugs, and hormones have been firms specializing almost entirely in animal health goods.

Dorn and Mitchell, Inc. (Birmingham, Ala.), Dr. Salsbury's Laboratories (Charles City, Iowa), Ft. Dodge Laboratories (Ft. Dodge, Iowa), Globe Laboratories (Ft. Worth, Tex.), Jensen-Salsbury Laboratories (Kansas City, Mo.), and Pitman-Moore (Indianapolis) are representative companies in this category.

But only since the advent of antibiotics have the firms that leaned toward human medicines beefed up their vet divisions.

Some, like Pfizer, have established vet sections only recently. Pfizer readily admits that its division (ag products now make up about 10% of Pfizer sales) was established largely to find additional uses for its terramycin, somewhat of a latecomer to the broad-spectrum antibiotic sphere. Merck and Lederle got underway on a large scale when they began B<sub>12</sub> production. Abbott, Parke-Davis, Upjohn, and Wyeth, to list a few, are among the firms whose veterinary medicine interests are largely tied to antibiotics.

Most firms are finding that the USDA's Bureau of Animal Industry (dealing with vaccines, serums, etc.) and the Food and Drug Administration (antibiotics) are helpful in put-

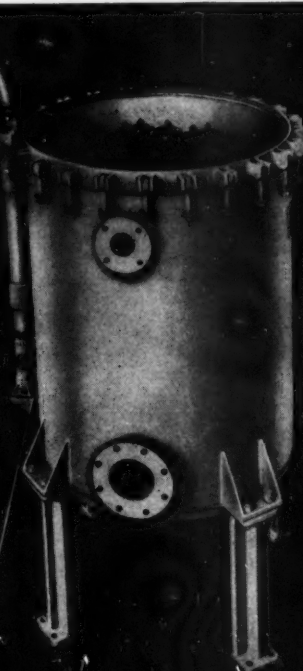
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**RAISE FILTRATE QUALITY  
LOWER MAN-HOUR COST**  
with

**CHEMICAL  
ADAMS FILTERS**

- Poro-Stone or Poro-Carbon permanent filter media for ideal filter aid support.
- Backwash without disassembly or removal of any part. Filter is on-stream again in minutes.
- Hydraulic davit lifts free-swinging cover for inspection (optional). NO HOOKS, CHAINS OR HOISTS NEEDED.
- Complete package, single filter or battery, includes filter aid precoat tank, continuous filter aid feeder, pressure backwash tank, pump, valves and piping.

Write for your copy of Bulletin 430

**R. P. ADAMS CO., INC.** 240 E. PARK DRIVE  
BUFFALO 17, N. Y.





Victor Sodium Tripolyphosphate for detergent manufacture. Increases water-softening, provides greater peptizing and dispersion, enhances free-rinsing . . . makes detergents clean better.

*New*  
this is the way we wash our clothes!

## and the way an industry increased business

There is no greater stimulant to sales than giving your product a "new look" or a new quality with a terrific consumer appeal. "Soapless" detergents took the consumer market by storm and Victor is proud that its sodium tripolyphosphate is playing a major part in the development of this wash-day miracle.

### How You Can Profit from Victor Chemicals

Finding faster, lower cost, or better methods of producing better goods has been our forte for 55 years. The helping hand of Victor's research department and the excellence of Victor chemicals are well known to more than 40 different industries, from agriculture to textiles . . . from metal treating to pharmaceuticals. If you have a process or product problem that a chemical might solve . . . or if you are looking for an unusually capable source of supply for industrial chemicals, it will pay you to have your technical men get together with ours. Victor Chemical Works, 141 W. Jackson Blvd., Chicago 4, Ill.

In the west: A. R. Maas Division,  
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Dependable Name in  
*Chemicals*  
for 55 Years

*Plants:* CHICAGO HEIGHTS, ILL. • MT. PLEASANT, TENN. • MORRISVILLE, PA. • NASHVILLE, TENN. • SILVER BOW, MONT. • SOUTH GATE, CALIF. • VICTOR, FLA.

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Our solution is very direct. No doubt many of your trained engineers and chemists are tied down by routine but essential testing and analytical tasks. You can release these men for more demanding, more responsible duties by entrusting our laboratories with your rou-

tine testing and analytical schedules.

Why is this possible? Because Testing is our Business. Your assignments to us will be handled by men who live and think testing. They will receive the care and attention that only a specialized laboratory can give. That means speed, accuracy, and real economy.

We would like to get together and discuss your manpower problems and possibly point the way to a solution.

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Your labeled products are competing with thousands for the buyer's attention. Is their outward appearance worthy of the contents? This 8 page Round Container Labeling Bulletin, profusely illustrated, tells you how to achieve clean, neatly labeled, salable containers at low cost. Modern can labeling methods and machines available today to give you top efficiency in your labeling department are fully described. Learn all about the many Paisley scientifically designed Cold and Hot Pickup Gums, Lap Pastes and Spot Labeling Adhesives. Meet the competition in your industry with the help of Paisley Round Container Labeling Adhesives. Send for your copy now.

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Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products  
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## SPECIALTIES . . . . .

ting new products on the market.

Rules that apply to medicines for humans are also applicable to the farm medicines, although there appears to be somewhat more latitude in labeling. There are two reasons for this: the FDA finds there are fewer abuses of labeling provisions, and by the time antibiotics are economically feasible for livestock, their properties have been thoroughly and exhaustively explored.

**Where to Buy:** Most of the antibiotic producers aim at "ethical" distribution of their products—the veterinarians. One company estimates that the nation's 10,000 vets buy about \$500 worth of supplies per month—about \$60 million/year. Currently, according to the *American Druggist*, drugstores dispense about 28% of the total in health goods.

No matter where they buy them, chances are farmers will buy more and more. Antibiotic feed supplements took hold with a rapidity that startled many a veterinarian.

But there's one aspect that has at least one vet medicine maker musing: will the antibiotics, too, encounter specious objections—objections that sanitation, natural forage, and non-interference with breeding cycles will supply all the needed nurture—from "organic farmers" who have plagued fertilizer and insecticide makers? Such arguments there may be, but the farmer is apparently too pleased with results to lend an ear to them.

**Paper Suds Bucket:** Looks like the next step will be paper cups for beer. The Dixie Cup Co. (Chicago) has come up with a cup impregnated with special materials and treated with an additive that will hold the head on the beer.

Claiming approval from "significant sources," Dixie says the new container is a great improvement, sanitation-wise, over the glass dipped in hot chlorine water. New products will be priced the same as the regular Dixie cups.

**Rocket Motor:** Grand Central Aircraft Co. (Glendale, Cal.) has established a rocket division near Pacoima, Calif., to produce its new rocket propellants. The company claims a unique propellant, featuring low flame temperature, low cost, long storage life, and wide range of operating temperatures.

**Additive Addition:** The Lubrizol Corp. (Cleveland) has acquired a 17-acre site near Niagara Falls, Ontario, where it will construct a \$400,000 oil-additive plant.





With  
Esso  
Solvents  
multi-storage availability  
is assured too!

**STORAGE FACILITIES and WATER TERMINALS** in industrial centers give added convenience to the users of Esso Solvents. Shipments are made to meet users' requirements... by tank cars, tank trucks or drums. Specify Esso Solvents for dependable, convenient delivery right to your door!

**YOU GET ALL 6 OF THESE  
IMPORTANT FEATURES  
WITH ESSO SOLVENTS**

- 1. Multi-storage availability** — water terminals in industrial centers.
- 2. Uniformity** — made in modern refineries from carefully selected crude oil sources.
- 3. Economy** — A storage facility near you for low freight cost and quick delivery.
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- 6. Modern handling methods** — separate tank storage, pumping lines, tank cars and trucks, are used throughout in all Esso Solvent handling operations.

**Esso Solvents:  
versatility and  
dependability  
with controlled  
high quality.**



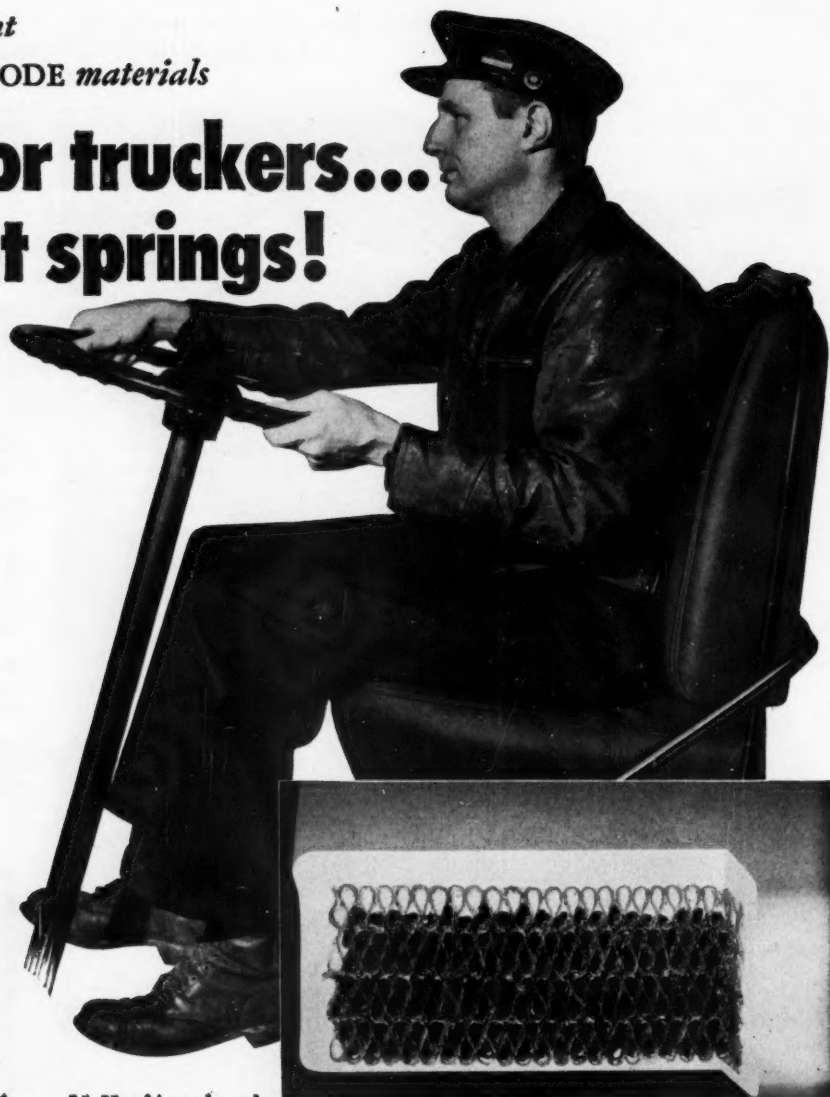
**PETROLEUM  
SOLVENTS**

**SOLD IN:** Me., N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md., D. C., Va., W. Va., N. C., S. C., Tenn., Ark., La.

**ESSO STANDARD OIL COMPANY**  
Boston, Mass. — New York, N. Y. — Elizabeth, N. J.  
Philadelphia, Pa. — Baltimore, Md. — Richmond, Va.  
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*Another new development  
using AMERICAN ANODE materials*

## Comfort for truckers... without springs!



**T**HERE'S comfort in the cab for truckers with this NuKraft foam pad. It gives all the soft density of foam rubber plus "backbone" of sterilized, American Anode, latex-dipped hog hair—a special NuKraft construction.

Lateral stability, important to drivers, is assured by these pads. There is no tendency to "bottom". One thickness does the job so that there's more leg and head room.

NuKraft's reduced weight makes it ideal for aircraft seating, and for other uses where its advantages can bring improvements and economies.

It's another example of how American Anode helps manufacturers develop and improve profitable products. For American Anode latices, resin pastes and other materials have a wide variety of uses.

Applications range from coatings and fabrics to a plastic modeling compound and a method for printing permanently on rubber!

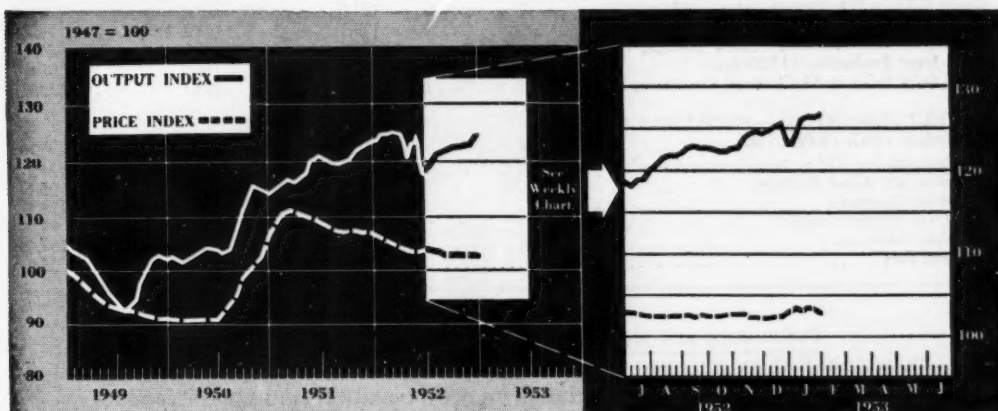
Perhaps our wide experience can help you produce more saleable products—cut costs, too. For helpful information, please write Dept. AA-2, American Anode, 60 Cherry Street, Akron, Ohio.

# AMERICAN ANODE

A Division of The B. F. Goodrich Company

**CRUDE AND AMERICAN RUBBER LATICES, WATER CEMENTS AND SUSPENSIONS,  
AMERICAN RESIN PASTES, COMPLETE MANUFACTURING FACILITIES**

# MARKETS . . . . .



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries  
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

## MARKET LETTER

Soaps are still sliding, synthetics climbing, according to the 1952 annual report of the Association of American Soap & Glycerine Producers. Combined sales of soap and synthetics, up 2½% over 1951, break down like this:

- Synthetics—1,530 million lbs., up 21.9%.
- Soaps—1,870 million lbs., down 9.1%.

DDT for Iran, Uncle Sam's latest move in insecticides, will lighten bulging stocks of suppliers. The State Department's Technical Co-operation Administration invitation for bids, calling for 700 tons DDT (water-wettable 75%, World Health Organization specifications) closes Feb. 26. Invitation No. IB-430-241-15-1020 may be obtained from Procurement Section, TCA, Div. of Central Services, Dept. of State, State Annex 9, Washington 25, D.C.

Elsewhere, 1953 marketing prospects of DDT and other insecticides, fungicides, agricultural chemicals will be subjected to expert scrutiny. Occasion is the National Agricultural Chemicals Association meeting in New Orleans March 11-13. Top USDA brass are slated to discuss means of paring the \$13 billion annual loss caused by insects, diseases and weeds.

Polyethylene is not scarce; take the National Production Authority's word for it. If you can wait until April, NPA anticipates production from then on will take care of everyone.

With the blessings of both their governments, eager Japanese chemical manufacturers are teaming up with American technical advisers to boost Japan's output of synthetic resins, sulfa drugs, antibiotics, other chemicals. There's a large unsatisfied demand for such products among the Japanese, whose population has hit 84 million.

As of last week, 26 agreements between Japanese and American companies had been officially registered by the Japanese Foreign Investment Review Commission of the Ministry of Finance, the Japanese body passing on such arrangements. More are in the offing.

Change of pace? Rayonier will close its Port Angeles, Wash., dissolving pulp plant for three weeks. Its reason: reduced demand.



## MARKET LETTER

### WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	127.0	127.0	124.8
CHEMICAL WEEK Wholesale Price Index (1947=100)	103.1	103.2	104.1
Bituminous Coal Production (daily average, 1,000 tons)	1,423.0	1,479.0	1,764.0
Steel Ingot Production (1,000 tons)	2,248.0	2,248.0	2,098.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	263.1	263.1	235.7

### MONTHLY INDICATORS—WHOLESALE PRICES (Index 1947-1949=100)

	Latest Month	Preceding Month	Year Ago
All Commodities (Other than Farm and Foods)	112.9	112.9	114.3
Chemical and Allied Products	103.6	103.3	106.7
Industrial Chemicals	112.8	112.3	118.1
Drugs and Pharmaceuticals	91.5	91.3	94.8
Fertilizer Materials	112.9	113.0	109.4
Oils and Fats	53.8	52.8	56.8

Price cuts are the fashion this week. Rival lindane makers are noncommittal as yet over Diamond Alkali's slash from \$4.50/lb. to \$2.75 (base price). Diamond, which claims its drop results from reduced production costs, may have found it timely to give slow-moving lindane a prod.

Another possible influence on Diamond's decision: rumors of new competitors crashing the exclusive circle of lindane makers.

Ethylene glycol prices are softening. Right now manufacturers are trying to unload \$3.75/gal. anti-freeze (which accounts for 70% of the chemical) at \$2.50-\$3/gal.

Makers blame the mild winter for present surplus. But they're more concerned over long-term swollen capacity (CW, Oct. 11). While 1952 sales slumped 10% from previous year, production spurted to 800 million lbs.—up 33% from 1951.

Toy makers among others will be happy to hear that one of the plastics (see Price Changes for others) undergoing price cuts is Dow's Styron 475, high-impact polystyrene. Dow attributes the 10% drop (to 37¢/lb.) to increased production facilities, improved techniques.

The Manufacturing Chemists' Association, with a pat for industry's back, is happily displaying the chemical price records.

Since Korea, boasts MCA, the U. S. Bureau of Labor Statistics wholesale index for chemicals and allied products rose a paltry 3%. Index for all commodities, as distinguished from chemicals, jumped 11%.

Two MCA reasons for the hold-the-line results:

- New and improved processes.
- Larger, more efficient plants. The industry has already reached the half-way post in its \$6 billion (by 1955) expansion program.

But with controls coming off, look for some breaks in the price line. OPS controllers claim increases seem sure for "petroleum products, anthracite, natural gas industry items, drugs and cosmetics, fertilizers and a number of other important chemicals and plastics."

Although price control is scheduled to end April 30, there is evidence that the Administration may be taking a close look at stand-by controls.

### SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending February 16, 1953

#### UP

	Change	New Price		Change	New Price
Coal tar, resale, crude, tanks, gal.	.014	.154	Creosote, coal tar, crude, tanks, gal.	.02	.22

#### DOWN

	Change	New Price		Change	New Price
Ethyl acrylate, dms., c.l.	.06	.42	Methyl acrylate, dms., c.l.	.07	.42
Lindane, truck, 20,000 lb. min.	1.75	2.75	Tallow, inedible, extra	.00125	.04375

All prices per pound unless quantity is stated.



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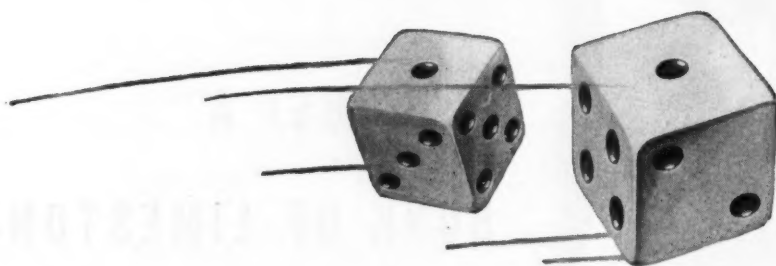
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## Detergents: Tallow Market?

First plant to make fatty alcohol sulfates from tallow will go on stream next month.

Market potential for detergent and other uses could absorb at least 200 million lbs. of tallow. Present surplus is about 250 million lbs.

"If you can't beat 'em, join 'em." And that's exactly what tallow, the ousted heavy of the soaper's opera, may soon do. As a new source of fatty alcohol sulfates it promises heavy competition for coconut oil- and petroleum-based types.

Stepan Chemical Co.'s (Chicago) semi-works plant will go on stream in March, produce 1½ million lbs./year. Output will serve mainly to explore the market, find out what size commercial plant may be needed for the future.

A sodium reduction process will convert tallow to a mixture of approximately 68% stearyl and oleyl, 29% cetyl and 3% myristyl alcohol—readily converted to the sulfates. According to Stepan, these higher-carbon fatty alcohol sulfates have a number of advantages over coconut oil-based (predominantly lauryl) sulfates and alkyl aryl sulfonates. Hence tallow may be able to return to the detergent fold via the synthetic route.

Among tallow-sulfate advantages claimed: better detergency (whiter clothing at lower concentrations), greater emolliency to the skin, a cheaper and available raw material.

Several distinct trends are apparent in the continuing growth of the detergent field. And most of these trends can offer growing markets for tallow-based detergents.

**Heavy and Light:** Detergent formulations are shifting toward more alcohol sulfate, less alkyl aryl sulfonate. Current heavy-duty types run about 17% active content (one runs 35%)—of which 8% is sulfate, 9% sulfonate. Annual sales are about 35 million cases (1.05 billion lbs.). Formula revisions may soon bring sulfates up to 10%, lower the sulfonates.

Even with no increase in sales, this will soak up 105 million lbs. of sulfates. Stepan feels that its new tallow-based material will fill the bill better than coconut oil-based product.

Lighter-duty formulations also offer increased sulfate outlets. Liquid dishwashing detergents show a burgeoning growth (CW Apr. 26, '52) that now uses 10 million lbs. of sulfates annually, promises more for the future; likewise, the liquid types used in shampoos. And there's the upcoming market for bar detergents which should mature in two or three years.

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## MARKETS . . . . .

In all, the total demand from the detergent field now adds up to 150 million lbs. of sulfates a year. Although demand is now supplied almost totally by coconut oil material, the picture may be in for a change. Each pound of sulfate requires  $\frac{2}{3}$ - $\frac{3}{4}$  lb. of fatty alcohols. If these were all obtained from tallow, present requirements would be 200 million lbs. of tallow.

**Besides Detergents:** In addition to detergent uses there are other fields in which tallow sulfates offer distinct advantages over currently available materials. They can be used as plasticizers and in unsaturated types of coating resins and certain polyester resins.

They can also be used in Zelan-type water repellents, as oil additives and as emollients in cosmetics.

Stepan claims tallow sulfates are superior to coconut oil products as a base for making mercaptans used in synthetic rubber. Although the switch to cold rubber may decrease the market from its present 5-million-lbs.-a-year level, some will always be required here.

Development of these markets for tallow sulfates depends on one "if"—if tallow remains near 5¢/pound.

Some alkyl aryl sulfonates will always be required in detergent blends because of their high foaming qualities. But competition from the sulfates is expected to bring sulfonate prices down from the present 13¢/lb. to a fairly stable level near 10¢. Although the sulfonates will be used at a lower ratio, volume is expected to remain fairly constant because of the continuing trend to detergents.

**Besides Stepan:** Stepan isn't alone in the move toward tallow, though it will be the first to offer it on the market. Two of the large meat packers may soon announce similar plans—their interest is obvious.

Other chemical manufacturers are likewise in the field. Rohm & Haas completed its detergent plant less than a year ago. Production was captive until a few months ago when sales were initiated on the open market. This plant could easily operate with tallow as a raw material. Archer-Daniels-Midland has recently approved a plant to make cetyl alcohol sulfate from sperm oil.

If things work out as predicted, tallow may soon be back in the dishpan, washing machine and bathtub. The only difference: it'll be dubbed "synthetic" instead of "soap."

## Added Odor For Safety

Service with a smell—that's what natural gas users in the Pittsburgh district of Western Pennsylvania can expect from now on. And it's for their own good, say suppliers.

So that gas leaks may be quickly detected, three major natural gas suppliers in the Pittsburgh area—Peoples Natural Gas Co., Equitable Gas Co., and Manufacturers Light and Heat Co.—are completing plans to odorize their product.

Peoples disclosed that about 100,000 of its customers are already getting a smell in their gas. Completion of its odorization project is slated for the near future.

Equitable's first odorization will start operating next spring. It's installing the necessary equipment just as soon as transmission lines can be spared long enough for the job.

Manufacturers' plans call for completing its odorization by spring, the exact time depending upon weather conditions. It is now purchasing equipment, will start installation soon.

All three companies will use the same odorant. Said to be harmless and not to permeate foods, it burns completely, has no petroleum odor.

Gas company officials claim the odorant is quickly detectable when gas is leaking but burns without smell after the appliance has been lighted.

One company revealed that its odorizing program will cost more than \$50,000, require at least six odorization stations.

To date, adding an odor to the gas has been on a purely voluntary basis. However, the gas companies' decisions to odorize may have been spurred on by possible State of Pennsylvania General Assembly legislative action.

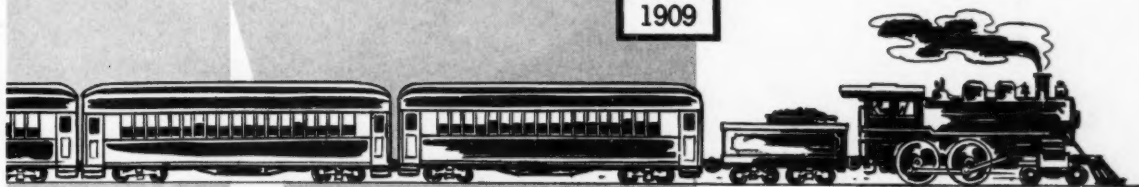
State Representative John J. Murray of Forest Hills intends to introduce a bill in the current session of the Assembly that will make odorization of gas by utilities mandatory throughout the state.

Commenting on the urgency of such a law, Murray expounded, "To all of us who know too well the calamity of terrible gas explosions, it is unthinkable that a complete gas odorization program by all gas companies has not been started by this time."

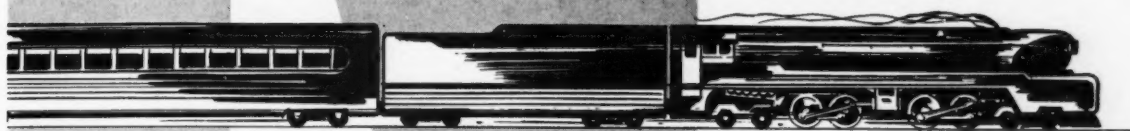
Odorant makers, smelling a market, will watch with interest the progress of the bill.

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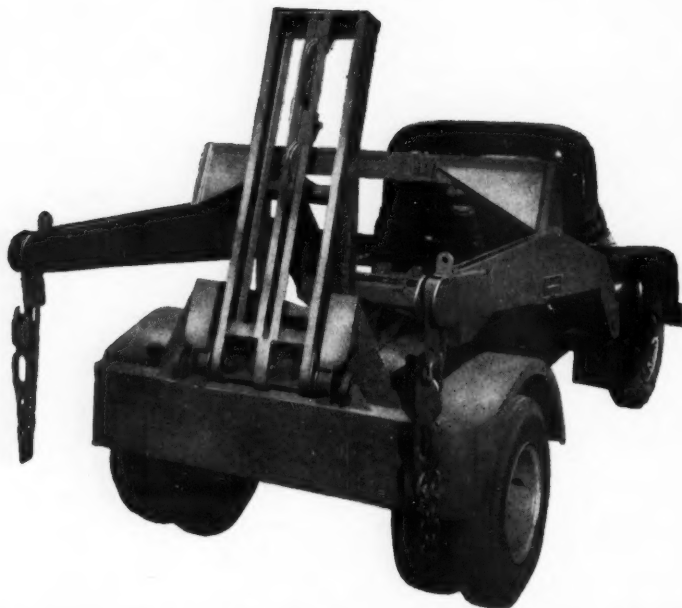


1953



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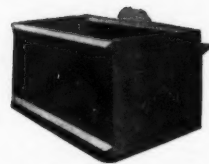
In many plants a Dempster-Dumpster, like the one above, operated by only one man, the driver, has replaced 3 to 5 conventional trucks and crews. The reason for this is that one truck-mounted Dempster-Dumpster serves scores of Dempster-Dumpster Detachable Containers up to four times the capacity of the average dump truck body. These containers are built in a wide variety of designs best suited to the type of materials handled—be they bulky, light or heavy . . . solids or liquids . . . trash or rubbish. Containers are conveniently located at accumulation points inside and outside buildings. To illustrate the flexibility of the Dempster-Dumpster System in handling all types of materials in your plant, we show, at right, a few of the

dozens of Dempster-Dumpster Containers built to meet every bulk materials handling need. And remember, one truck-mounted Dempster-Dumpster handles all containers, regardless of capacity or design.

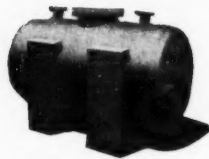
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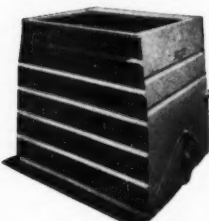
Drop Bottom Container built up to 10 cu. yd. capacity to handle heavy materials.



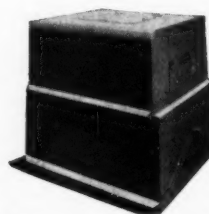
Tank Type Container meeting A.S.M.E. specifications. Capacities up to 1,200 gallons.



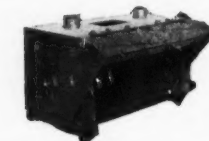
Tilt Type with Converged Lip for handling fine aggregate, wet or fluid materials.



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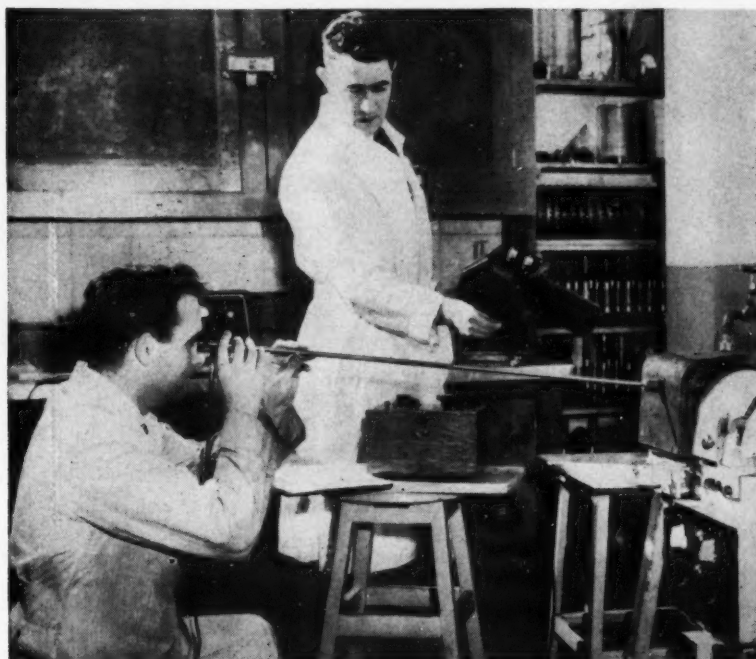
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Taking a train this week from New York to Boston is a top-notch researcher for one of the tonnage-gas producers. His objective: to learn how minute particles of radioactive materials can be used to simplify or improve his company's processes. Neither he nor his instructors at the Tracerlab, Inc. laboratories have any idea what the answers will be. It's a wild-blue-yonder project in the strictest sense. But scores of other companies have tried the technique with profitable results.

What prompted this particular trip? It had its start—like many others—in a low-key lecture given by one of Tracerlab's sales representatives at a staff meeting of the participating company's engineers and chemists.

Such a meeting rarely has a direct objective. The salesman isn't trying to sell anything specific. What he has to offer is a new concept, a new ap-

proach to old problems, an open-minded attitude. By reviewing what radioactive isotopes have done for other technical men, he tries to stir the imagination of those in his audience—letting them apply the basic principals to their own laboratories and plants.

This selling of imagination is the chief characteristic of a new breed of chemical salesman. Peddlers of isotopes, as a group, have no signposts to go by, no down-to-earth literature references on which to plan a sales campaign.

**Hot Items:** Tracerlab, with 10 salesmen in the field, was one of the first companies to enter the uncharted industrial isotopes field. It is still acknowledged to be the volume leader, with sales running up into the millions of dollars a year, but other firms are coming along fast (see box, p. 62) in the competitive race.



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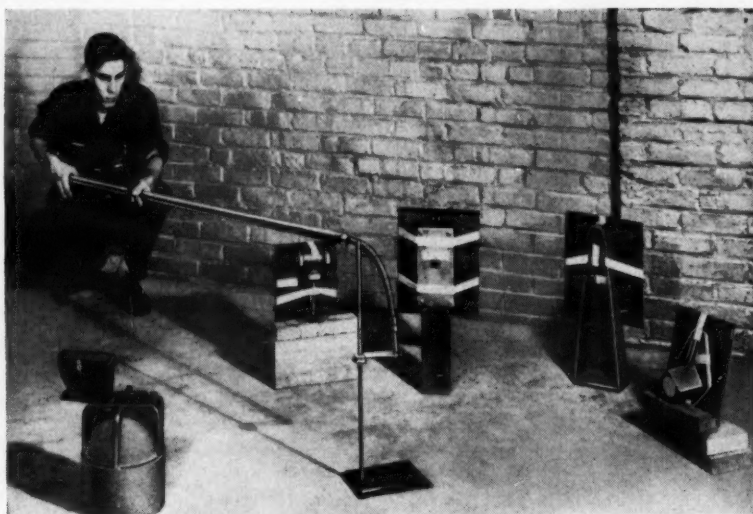
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In Chicago, for instance, the Nuclear Instrument and Chemical Corp. markets a line of tagged products known as "Chemrad Radiochemicals." It also makes a variety of testing and laboratory equipment, grows plants in a C-14 atmosphere to obtain radioactive chlorophyll and other plant extracts, and acts as a U.S. distributor for the British Radiochemical Centre.

Some of the companies specialize in one particular field or application. Industrial Nucleonics (Columbus, Ohio) is a specialist on beta gauges—the instruments used for the continuous measurement of film thicknesses. Chicago's Abbott Laboratories has built up a reputation as a supplier of radioactive drugs (medicinals in which the "hot" characteristic is used for therapeutic purposes—not just for purposes of identification).

Abbott's case is also special in that it is the only firm which has elected

to put its plant at the doorstep of AEC's giant Oak Ridge installation, original source of most radioactive compounds. Abbott took this step because of the short half-life of its principal compounds. The producer, in this case, pays the bill for deterioration during processing and shipment. Abbott uses air freight extensively, has stood helplessly by on stormy days and watched its delayed shipments lose as much as 10% of their value.

**Alpha and Beta:** Although it is difficult to generalize in the fast-changing world of industrial radioactivity, it is becoming apparent that there are three primary markets or applications for makers of atomic instruments and compounds:

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- Supplying sources and recording instruments for applications in which

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**BETA GAUGE:** One of the few standardized "gadgets."

the radioactive beta rays are used as a working tool.

- Developing and producing recording instruments for civil defense authorities.

Of these, the most clearly defined is the third. Yet it's a market that is not easily covered. Civil defense authority is delegated differently in every town, city and area. Moreover, industrial concerns are becoming increasingly conscious of their preparedness responsibilities. That means every factory and office building is a potential customer for Geiger counters, pocket monitors, and dosage meters.

The future isn't quite so clear, however, for the other markets. Source-type applications have received the most standardized industrial acceptance. These uses include beta gauges for film-thickness measurements and cobalt-60 sources for industrial radiography.

Both applications can be added readily to current manufacturing procedures—with a minimum of AEC red tape. The cobalt-60 technique is a replacement for industrial X-rays, without the expense of radium sources. Isotope companies supply the necessary handling equipment, recording instruments, and training programs.

Tracer uses, in contrast, are centered mainly in the low-quantity, high-complexity area of research and development. Tagged chemicals are used to explore the efficiency of chemical reactions; "hot" metal is used to test the wear of mechanical moving parts; and determination of difficult-to-measure physical properties (e.g., the absorbent power of mineral fibers) is

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lenge and opportunity of striking into  
the unknown is a more than ample  
reward.

## Sales Shuffles

Here are some recent changes in the  
industry's distribution channels:

- American Cyanamid's south-of-the-border subsidiary, Cyanamid de Mexico S. A., has taken one more step toward becoming the parent company's mirror image. The latest addition to its sales list is the complete roster of over 1,000 dyestuffs manufactured by the Calco Chemical Division.

Cyanamid de Mexico inherited these products from the Dyestuffs Department of Establecimientos Mexicanos Colliere—which was transferred to Cyanamid at the same time.

The Mexican company, formerly

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known as Reactivos S. A., now handles the American firm's complete line of agricultural chemicals, mining chemicals, insecticides, textile finishes, and dyestuffs.

• In another American Cyanamid move, this one north of the border, the Coating Resins Department has opened a separate branch office in Cincinnati, Ohio. W. B. Lambert will be the first manager of the new office.

• United Chemical Co., Heckathorn & Co., and the Agricultural Chemicals Service Co.—a three-in-one organization which makes its headquarters in Richmond, Calif.—has opened up a new sales and service office in Yakima, Wash. Its previous outlets have all been in California: at Sacramento, Fresno, Bakersfield and Pomona.

Available: The Chemical Division of the Celanese Corporation of America has commenced commercial production of trioxane, the crystalline form of formaldehyde which is being used by the government as the standard Army heating tablet. Shipments to industry will be made in 20- and 55-gal. fiber drums.

Dickering: Reports are that Switzerland is about to buy 10,000 tons of Mexican sulfur at less than \$70/ton. The Swiss are haggling over the price, knowing that Mexico is anxious to make the sale in order to clear its unfavorable trade balance with Switzerland.

Something New: The American Can Co. has established a new division in its Research and Technical Department. To be known as the Development Division, it will be responsible for the transferring of new-product ideas from the laboratories to the plant production lines.

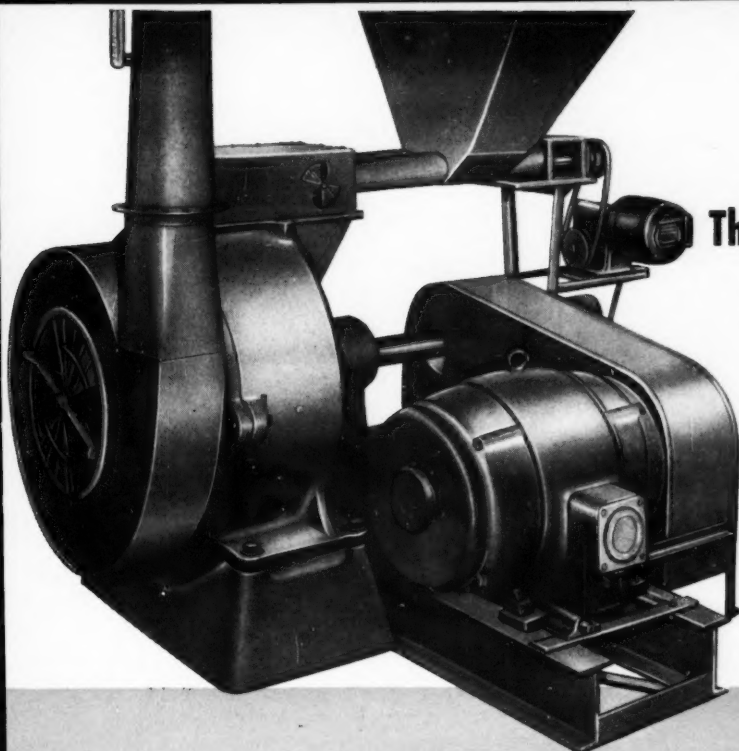
On another front, American Can is releasing a 41-minute color movie entitled "The Miracle of the Can." It covers 50 years of can-making development.

New Publications: The mails are now carrying two new "house organs":

• Atlas Powder's "Chemmunique" is a pocket-sized pamphlet to be issued on alternate months. Printed in three colors, the copy does its selling with a light touch and a plenitude of cartoon illustrations.

• The Corning Glass Works has also started a bimonthly journal. Called the "Glassmaker," it will go to employees, customers, suppliers and stockholders. The make-up of the first issue is approximately two-thirds "external," and one-third "internal."





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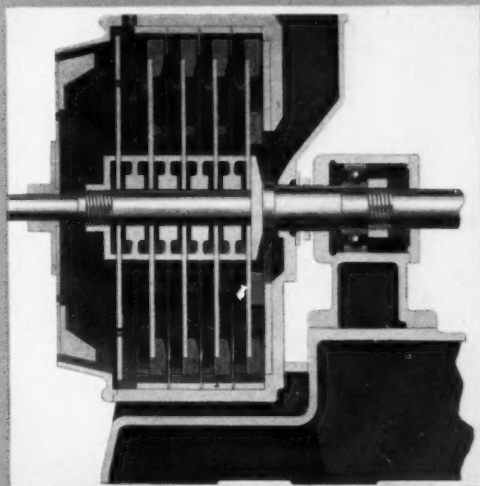
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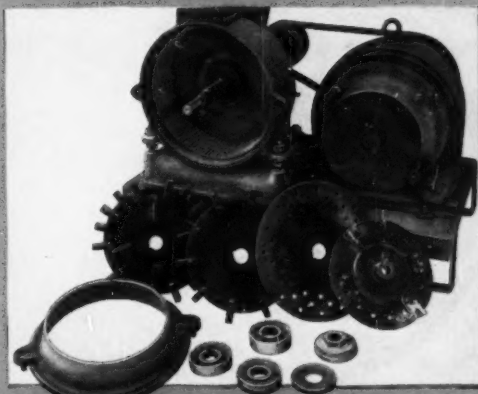
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GUAIACOLS • HEXAMETHYLENETETRAMINE  
MEDICINAL COLLOIDS • METHYLENE DISALICYLIC ACID  
NEOMYCIN • PARA-FORMALDEHYDE  
PARAHYDROXYBENZOATES • PENICILLIN  
PENTAERYTHRITOLS • PROPYL GALLATE • RESORCINOL  
SALICYLATES • SALICYLIC ACID • STREPTOMYCIN



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